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THE RÔLE OF PEDIATRICS IN PREVENTIVE MEDICINE*

THOMAS S. SOUTHWORTH, M.D.

NEW YORK

Since my paper deals with no narrow specialty, but one which involves the application to youthful subjects of all the rapidly growing wealth of medical knowledge, I am aware that it will be a difficult matter to present the rôle of pediatrics in preventive medicine without trenching somewhat on the field of other speakers. As a specialty, it can scarcely be said to have been recognized in this country before the creation of a separate department for our distinguished colleague, Dr. Jacobi, at the College of Physicians and Surgeons of New York, in the year 1860. Before that time, and too largely thereafter, it was linked to obstetrics and diseases of women, with which subjects it had only a quasi connection, and in consequence its study was contracted and neglected. Having broken its bonds, however, and emerged from overshadowing obscurity, pediatrics to-day stands for the application of the same scientific methods of investigation to the immature organism of the child and the diseases to which it is liable, as are applied to the study of similar processes during mature adult life and the subsequent period of gradual senescent decay.

Nevertheless, although often referred to and practiced as a specialty, pediatrics belongs, not to the few, but essentially to all practitioners of medicine, for they, rather than the specialist, are called on to apply its teachings in family practice to the vast majority of infants and children.

To distort somewhat a well-known saying of Dr. Oliver Wendell Holmes, let me advance the view that preventive medicine, as applied to the child, should begin with the grandparents. Since, however, this carries me somewhat beyond the limits of the subject assigned to me, I must perforce begin with the birth of the child. Even at this starting point, the pediatrist finds himself disputing the territory at both ends of the social scale—at one end with the midwife, and at the other with the obstetrician. Great as is the disparity between both the knowledge and equipment of these two groups who assist in ushering infancy into this inhospitable world, suffice it to say that there is a growing feeling that greater effort should be made by both groups to secure maternal nursing, because their tenure of the field is sufficiently long to determine, often irreparably, the mode of the infant's nourishment. If breast feeding has been unnecessarily rejected, the pediatrist, when called in, must make the best of the situation as he finds it, but he cannot always retrieve the error. However, since in the majority of cases the family physician conducts the confinement and also subsequently cares for the child, we may assume that pediatric teaching governs the management of the infant from birth.

First and foremost, pediatrics deals with the nutrition of the infant, for unless it lives, science can do nothing further for its welfare. Aside from reasonable hygiene which so many healthy infants seem surprisingly able to do without, the first step in the preservation of life is suitable food. As the majority fed at the breast thrive and the more vulnerable among the infants were found among those artificially fed, early attention was inevitably centered on substitute feeding. Since cows' milk was the best available substitute for breast milk, every effort was made to render it more suitable.

The discovery of teeming myriads of bacteria in commercial milk led Soxhlet to propose sterilization, in the belief that to bacteria were due the noxious effects of cows' milk on the digestive tract of the infant. Pasteurization followed as an improved method of killing, but not necessarily rendering innocuous, the masses of bacteria with their toxins which abound in ordinary milk. Then followed the triumph of pediatric endeavor in the inauguration of the movement, destined to be world-wide, for the production of clean milk, the laurels of which we willingly share with other workers who have helped to make it a possibility. This work must suffer no abatement. Milk, fresh and uncontaminated, must be produced in increasing quantities for the use of all young children, yet even recently there have appeared those who, tinctured with commercialism and ignoring all other factors, have claimed for Pasteurization all that has been accomplished in the reduction of infant mortality. From the pediatric standpoint, the rôle of Pasteurization is and ever should be, to keep clean milk sweet until it is consumed, never merely to render a filthy milk somewhat less dangerous.

During the past decade, pediatric investigators have been restlessly and energetically active in perfecting infant feeding. The belief once cherished that an exact counterpart of human milk might be made from cows' milk was quickly shattered. Although normal infants throve in greater numbers on such mixtures, it was found that they must be adapted to the inexperience, the age, and the idiosyncracies of the individual infant. For such adaptations, rules of great value were formulated and proved, yet for the less normal digestions further studies seemed necessary. As a result, the theoretical structure on which infant feeding was first based has been torn down and rebuilt. The proteins, fats, and latterly the sugars and carbohydrates entering into the composition of bottle feedings, have been scrutinized, tested, and adjusted. As a consequence, it may now be confidently stated that the infant, fed intelligently according to modern American methods, has to-day a

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better chance both of life and well-rounded development than ever before in our history.

As has been indicated, the purpose of nutrition is not only to preserve life, but to produce an uninterrupted and well-balanced development of the body. Gain in weight alone is not all that is required. Nature, as a rule, strives to do her work well, and if the conditions are favorable slights no part of it. But no workman can build well unless liberally supplied with proper material. The infant fed on condensed milk, for example, may be fat and apparently healthy, but Nature has been forced to do scamped work. In the usual dilutions, condensed milk is low in protein, lower in fat, and overrich in sugar. Such one-sided nutrition produces a development poorly fitted to withstand the effects of illness. Let it not be understood that this form of feeding is chiefly culpable. All artificial feeding holds this danger, partly because of its composition, partly because of the limitations of different infants in the digestion and absorption of individual elements in any food which replaces the natural breast milk. Such malnutrition, in greater or lesser degree, accompanies the ignorant home feeding, the carefully or carelessly yet faultily composed formulæ of many medical men, and the "just as good" substitutes of the patent-food makers. It is sometimes a question in my mind whether those errors of nutrition which are of lesser degree do not in their total produce more harm, since they are more frequent, less commonly detected, yet equally liable to leave their marks in some degree on their victims.

On the other hand, a body developed through proper, well-balanced nutrition, is not only less susceptible to diseases caused by bacterial invasion, but, if such occur, is better able to throw them off, and less liable to complications. When we realize the part played, not only by complications but by the other direct and indirect results of malnutrition in swelling the mortality figures among young children, the prophylactic importance of proper nutrition, in producing increased resistance becomes evident. Since we must all realize that the sturdy child possesses greater powers of protection and recuperation, it would hardly seem necessary to defend this premise; nevertheless innumerable instances of the effects of malnutrition present themselves to our minds.

With the marasmic infants digestive action is crippled; assimilation below par; slight errors in diet cause further disturbance; pulmonary diseases are readily acquired; hypostatic pneumonia is almost a specialty; furunculosis of a severe and debilitating type is not uncommon; suppurative conditions show little or no tendency to repair; the middle ear becomes affected on slight provocation; in the hot months, summer diarrheas more than decimate their ranks.

Rachitis, another form of malnutrition, varies so widely in the degree and distribution of its manifestations, that the claim so often made that it is present in the large majority of bottle-fed infants seems to be substantiated when careful search is made. The classical bone changes, important as they are, do not manifest the sole incidence of this common affection. The ligaments, the muscles, the nervous system, the respiratory tract and the intestine may likewise be affected and contribute to the symptomatology. Aside from such bone deformities as may influence the patient's appearance and bearing in later life, those of the thorax and pelvis are the most serious—the former increasing both the liability to and the danger from pulmonary disease; the latter, in the female, menacing in later years the life of both mother and child during parturition. The undeveloped musculature of the rachitic child, causing him to creep long after he should have walked, keeps him longer exposed to the dust and draughts of the floor, and deprives him of normal exercise, which plays such an important part in healthy development. The underfed and unstable nervous system contributes through convulsions and laryngismus its own quota of danger, not only of death, but also of lasting paralysis if there be hemorrhage at the time of the seizures. The relaxed and disturbed intestinal tract of the rachitic furnishes frequently a favorable field for the development of serious enteric affections.

The third of this group, infantile scurvy, is happily so uncommon as to play a smaller part in infant morbidity and mortality than the other forms of malnutrition, but its comparative rarity increases the danger that it may not be recognized and receive appropriate treatment. No affection of infancy can, however, be traced with greater certainty to some deficiency in the elements of nutrition, and its increasing frequency from the too exclusive and prolonged use of proprietary foods warns us to be alert in its detection.

The pediatrist has a further important rôle, as the adviser of the mother in the care of her children. All that may be summed up under the comprehensive term hygiene is taught her either in answer to her questions or through the medium of the printed page. The influence of bathing, clothing, fresh air, exercise, and hours of sleep, in the building of a resistant body and in the prevention of disease, together with the necessity for their nice adaptation to the differing periods of infancy and childhood, need only to be mentioned to this audience to be appreciated.

It is also the privilege of the children's physician not only to treat disease, but to foresee and prevent it. Simple as seems this statement, an incalculable amount of benefit can be bestowed on humanity in this way. Aside from the countless ills which can be prevented by proper management of the feeding, anemia must be recognized and treated if the child is to escape the severer effects of the acute infectious diseases. Rachitis, already mentioned, which the parent invariably overlooks until its effects are marked and possibly irremediable, must be detected and checked. The prophylactic care of the teeth, so commonly neglected because of the division of responsibility with the dental surgeon, should be insisted on from their earliest eruption. Adenoids and hypertrophied tonsils, which are rarely brought to the attention of the throat specialist until they have already wrought injury to the child in one or more directions, should be recognized and removed. The popular view, so often advanced, that adenoids and tonsils will be outgrown, or that it is scarcely worth while to remove them since they may later recur, is, without question, the echo of evasive statements made by physicians, who, feeling themselves incompetent to perform these simple operations, were the more willing to defer them indefinitely.

In direct opposition to the views of certain rhinologic colleagues, I believe that the early removal of adenoid obstruction to nasal breathing favors the normal use and consequent expansion of the nasal passages, and lessens very materially the probability of the occurrence of those chronic hypertrophic obstructions within the nose which later make the removal of the adenoids ineffective in restoring nasal breathing. He believes that the view of the rhinologists, that conditions other than the adenoid are responsible for a large proportion of the mouth-breathers, is due to the

late age at which they see these patients, and that the opportunity to operate more frequently during the first and second years would soon cause a modification of their views.

Nor does our interest and supervision cease when the child passes from the home to the school, or, in the case of the less fortunate, to the workshop or the factory. Behind the educator, the inspector and the reformer, stands the pediatrist, who, from his more intimate knowledge of the child's development and limitations, directs their enlightened efforts for the betterment of conditions in these fields.

I have endeavored to outline briefly in the foregoing remarks the lamentable results of neglect, and the enormous opportunities of the pediatrist if he exerts a wise control over the growing organism of the child. The trite phrase that "as the twig is bent, the tree's inclined," had never truer application than to the youthful body. Pediatrics has reduced to a science this formative period of human life. Endless possibilities pertain to the conscientious application of our knowledge.

Extensive as is the debt which we owe to the laboratory and to the co-operation of other specialties, gratefully as we acknowledge their aid in combating disease and in insuring to the rising generation a better equipment for their struggle, nevertheless, the earliest and the ultimate responsibility falls on the children's physician, for to his hands they are confided by their parents, and on his judgment reliance is placed, not only to deal with the present, but to detect and remedy conditions and tendencies ere they assume a harmful or serious phase.

807 Madison Avenue.

THE NOGUCHI SERUM REACTION FOR SYPHILIS AS AN AID TO DIAGNOIS IN EYE LESIONS*

ALBERT E. BULSON, JR., B.S., M.D.

Professor of Ophthalmology in the Indiana University School of Medicine

FORT WAYNE, IND.

The serum diagnosis of syphilis as given to the world by Wassermann, Neisser and Brück[1] in 1906, has now become a well-established diagnostic method, generally used in all medical centers, and has proved of value in all fields of medicine.

The Wassermann method is an adaptation of the Bordet-Gengou phenomenon of complement deviation, in which the hemolytic system consists of a suspension of washed red blood cells of the sheep, hemolytic amboceptor made by immunizing rabbits to sheep's red blood cells, and as complement fresh guinea-pig serum. For syphilitic antibody the serum from suspected patients is used, and for antigen a watery extract of a liver of congenital syphilis known to be rich in *Spirochæta pallida*.

It has been pointed out that there is one factor of error in this method due to the fact that there is in human serum a variable amount of natural antisheep amboceptor which tends to produce hemolysis and hence a negative reaction in the presence of the smaller amounts of syphilitic antibody. To avoid this error Noguchi[2] has proposed a change in the hemolytic system. His modification consists in using human red blood cells, with antihuman serum from rabbits, instead of sheep's cells and hemolytic serum from rabbits as used by Wassermann. By the use of this antihuman hemolytic system the variable antisheep amboceptor of human serum is eliminated as a disturbing factor. Noguchi has also found it possible to prepare antigen, antihuman hemolytic amboceptor and guinea-pig complement, in the form of reagent papers which remain fairly stable so long as kept perfectly dry, thus simplifying the method without any sacrifice in accuracy. His views regarding the use of complement dried in paper have been modified within the past few months and now he considers it advisable to use the liquid complement whenever possible, the use of complement in paper to be reserved for emergencies.

The technic of the test is described in detail in Noguchi's work[3] and is quoted in brief as follows:

Only about 2 c.c. of the patient's blood is needed and this may be obtained by puncturing the index-finger or lobe of the ear and collecting the blood in a small glass tube. The blood-clots and the serum separate in a few hours at room temperature. If the test is not to be made within two or three days the serum should be drawn off with a capillary pipette for storage.

The corpuscle suspension can be prepared with the blood of a normal person. The blood is allowed to drop into a test-tube of salt solution. The proportion should be one drop for each 4 c.c. The quantity of the suspension thus prepared is enough for one complete test, with some left over in case it is necessary to repeat the test. The suspension must be allowed to stand over night in a cool place, or is centrifugalized soon after collection, to separate the cells. The supernatant fluid is carefully poured off and replaced with a fresh salt solution and a suspension made by shaking. This operation removes the serum constituents, and especially the fibrin ferment, which often disturb the test. A 1 per cent. suspension of the washed corpuscles should be used.

To facilitate the carrying out of the test a rack containing two rows of holes for the tubes should be used. For each test two tubes are required, one in the front row and its control in the rear row. There will also be two pairs of tubes to serve as positive and negative controls.

Put into each of two small test-tubes, front and rear, one drop (about 0.02 c.c.) of the serum to be tested from a capillary pipette. Add to each tube 0.1 c.c. of 40 per cent. fresh guinea-pig serum made by adding 1 part of complement to 1½ parts of 0.9 per cent. salt solution. In an emergency or where fresh complement cannot be obtained dried slips of paper, each containing two units of complement, may be substituted. To the front tube add the slip bearing the antigen. Then to both tubes add 1 c.c. of the 1 per cent. suspension of washed human corpuscles. Shake the tubes thoroughly from time to time to distribute the reagents evenly throughout the mixture as they dissolve out of the paper.

With every series of tests it is necessary to carry out two sets of controls, and for this purpose four additional tubes will be necessary. To each of the first pair of these, one in the front and one in the rear row, is added one capillary drop of a syphilitic serum known to give a positive reaction. This will serve as a positive control. To the second pair add one drop of normal serum known to give a negative reaction; or the tubes may be left empty. This pair of tubes will serve as a negative control. Now put into each tube complement and into the tubes of the front row only antigen, adding finally 1 c.c. of the corpuscle suspension to each tube.

Place the rack holding these pairs of tubes in a water-bath, thermostat, or warm place not over 37 C. The vest-pocket is warm enough and convenient in an emergency when none of the above is at hand. Allow an hour from the time the mixture is made for the antibody to combine with the antigen and for complement to be fixed. If a water-bath is used, thirty minutes is a sufficient length of time. If dried paper complement

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1 Wassermann, Neisser and Brück: Deutsch. med. Wchnschr., 1906, xxxii, 745.

2. Noguchi: A New and Simple Method for the Serum Diagnosis of Syphilis, Jour. Exper. Med., 1909, xi, 392.

3. Noguchi: Serum Diagnosis of Syphilis, J. B. Lippincott, 1910

is used this period of incubation should be extended to twice as long as is the case when liquid complement is used. The contents of the tube are as follows:

Rear: Test serum + complm. (2 units) + 0 + corpuscle susp. 1 c.c.

Front: Test serum + complm. (2 units) + antigen + corpuscle susp. 1 c.c.

First incubation at 37 C. for one hour; then add to each tube, both front and rear, a slip bearing two units of amboceptor. Allow another two hours in the thermostat or one hour in water-bath. After final incubation the tubes should be kept at room temperature for a few hours before the results are recorded.

It is necessary to make certain that the tests in the control sets have been properly carried out. The pair of tubes containing normal serum (or without any serum) must be completely hemolyzed. These constitute the negative controls and show that the hemolytic system used is effective, and that the amount of antigen used is not by itself inhibitory of hemolysis. Next, the front tube of the positive control set, containing a known syphilitic serum, must show total inhibition of hemolysis, while the rear tube must show complete hemolysis. Thus we are certain by the rear tube that the syphilitic serum itself does not inhibit hemolysis, while the front tube, in which hemolysis is inhibited, shows the ability of syphilitic antibody to fix complement in the presence of the antigen employed.

These essentials having been fulfilled, the tubes containing serum for diagnosis can be scrutinized. In these tests hemolysis must be complete in the rear row, since antigen is not present and the amount of serum used should not be inhibitory. Should hemolysis be inhibited markedly, showing usually an anticomplementary action on the part of the patient's serum, this may be overcome by "inactivation" of the serum for thirty minutes at 56 C. (before commencing), after which it will be necessary to use four to five drops of the serum in the test. The time of inactivation for this purpose may be shortened to fifteen minutes (instead of thirty minutes) and three drops of the serum used in this instance. The anticomplementary action can be overcome also by the use of a larger dose of complement. In case inhibition is only slight in amount, the addition of 0.15 to 0.20 c.c. of a 40 per cent. complement mixture (mentioned already) can be used. The above irregularities are occasionally encountered in the test, especially during the summer months.

The tubes containing the serum for diagnosis and antigen, the front row of tubes, may be examined for final results. Here any degree of hemolysis may be encountered, from total inhibition to complete dissolution of corpuscles, depending on the presence or absence of syphilitic antibodies and the number of antibody units. With complete inhibition of hemolysis, the end reaction is easily interpreted, the corpuscles settling to the bottom of the tube with the clear salt solution above. Complete hemolysis likewise gives a result easy of interpretation, for the corpuscle mass is entirely dissolved, the hemoglobin going into solution and coloring the salt solution a deep reddish color.

By taking into consideration the bulk of corpuscles settling to the bottom of the tube and the amount of tinting of the supernatant salt solution, and by comparison with the positive and negative controls, the varying degrees of inhibition of hemolysis may be ascertained. In interpreting the result complete inhibition of hemolysis comparable with the positive control is called strongly positive; complete hemolysis, comparable with the negative control, is designated as a negative reaction. If 60 to 70 per cent. of the buik of corpuscles is dissolved the reaction is doubtful and should not be taken into consideration for diagnosis. In a known specific case such slight inhibition should be an indication for further treatment as evidence of the continued presence of syphilitic antibodies in the patient's blood. If there is a faint degree of hemolysis, the main bulk of corpuscles being intact, the reaction should be called positive. A more intense hemolysis, with about 10 to 20 per cent. dissolution of the corpuscle mass, should be called weakly positive, while 30 to 40 per cent. hemolysis is designated as faintly positive. Neither the weakly positive nor the faintly positive reaction should be accepted as a definite diagnosis of syphilis without the presence of strong clinical evidence in favor of such a diagnosis. In case the reaction should be doubtful, the serum should be reexamined after a period of a week has elapsed, and if necessary several examinations in succession should be made. In all cases it is a wise precaution to take the blood for examination shortly before meal-time.

It may be stated here that all human serums gradually become anticomplementary after several days on standing, some more pronouncedly so than others. This change sets in much more rapidly at a higher temperature, such as that of a room, than at a lower temperature, such as that of a refrigerator.

In order to have a positive control test, whenever examining an unknown serum one must always have at hand a syphilitic serum known to give a positive reaction. For this purpose one has to obtain a good specimen, which can be preserved on ice for months. Should such a specimen become too anticomplementary on standing, one can remove this property by heating the serum at 55—56 C. for about fifteen minutes.

The method of titrating the antibody content of syphilitic serum in order to determine the exact strength of each specimen is fully described by Noguchi, as also the manner of preparing slips. Guinea-pig serum is used as complement and this should be used fresh, as after the serum is forty-eight to seventy-two hours old its activity is rapidly lost, even at refrigerator temperature if the serum is kept in a fluid form.

Antihuman hemolytic amboceptor is made by immunizing rabbits against human blood corpuscles. Large rabbits are injected with increasing amounts of washed human blood corpuscles five times in succession intraperitoneally, allowing a four-day or five-day interval between injections. Nine or ten days after the last injection the rabbit may be bled from the carotid artery, the blood collected in a tube and placed at room temperature for several hours before being transferred to the refrigerator. At the end of twenty-four hours the clear serum is collected by decantation and this should be titrated to determine its strength. Different rabbits react differently to amboceptor production and often a weak serum will be obtained after a long immunization, while at other times a powerful serum may be obtained after four injections. A good preparation will have a value of one unit in something less than 0.001 c.c. of serum; that is 0.001 c.c of serum or less will cause complete hemolysis of 1 c.c. of a 1 per cent. suspension of human erythrocytes when combined with an excess of complement, say 0.02 c.c. of fresh guinea-pig's serum.

Noguchi states that alcoholic extracts of certain tissues contain variable quantities of antigen for syphilis. There is more in heart, liver or kidney than in nervous tissues, so far as has been determined. The liver of a congenitally syphilitic fetus is one of the tissues richest in these antigenic lipoids. In the preparation of antigen the procedure is as follows:

Extract a mashed paste of liver, heart or kidney of man, ox, guinea-pig, rabbit or dog with ten parts of absolute alcohol at 37 C. for several days. Filter through paper and collect the filtrate. Bring the latter to dryness by evaporation, and take up the residue with a small quantity of ether and add five volumes of acetone. A precipitate forms, which is allowed to settle to the bottom of the vessel and the supernatant fluid decanted off. This insoluble residue contains antigenic lipoids and its strength is estimated by taking 0.2 gram of the residue, dissolving it in about 5 c.c. of ether, and gradually adding 100 c.c. of physiologic salt solution to make an emulsion. If flocculent it may be filtered through paper to remove the precipitate. This opalescent emulsion is used for the fixation test to find out the quantity needed to cause complete inhibition of

hemolysis when combined with a good syphilitic serum. Inhibition is caused by the coexistence or simultaneous presence of antigen and syphilis-antibody, and is of diagnostic value. Any quantity of the emulsion which is capable of causing complete fixation may be used for the test, but it is best to choose the maximum dose which is without inherent anticomplementary action.

Noguchi says that his method if properly carried out gives uniform and reliable results; but as the activity of the complement and the resistance of the red corpuscles sometimes vary according to their source and age, certain irregularities sometimes arise, which necessitate a knowledge of how to adjust relatively the quantities of these factors. There are no difficulties that arise which cannot be removed by the proper use of the several reagents, and definite and detailed information concerning the manner of eliminating error is given. Whether the active, old or inactivated serum is used is only a matter of personal choice, provided that the rules prescribed for active and inactive serums are observed.

Concerning the value of the serum test for the diagnosis of syphilitic conditions, Williams[4] states that by combining the figures obtained from numerous investigators comprising over 8,000 tests, an average of 75 per cent. positive reactions were obtained in all cases of hereditary and acquired syphilis. He has tabulated the results, which are given in Table 1.

TABLE 1.—POSITIVE REACTIONS IN 8,000 CASES OF HEREDITARY AND ACQUIRED SYPHILIS (WILLIAMS)

Stage of Disease.	% Positive.
Primary syphilis	70
Secondary syphilis	89
Tertiary syphilis	78
Early latent (late secondary symptoms)	51
Late latent (following tertiary symptoms)	47
Hereditary syphilis	95
Cerebrospinal syphilis	48
General paralysis	88
Tabes	63

Taking into consideration the fact that this includes tests made by various methods, some of which have been proved to be open to considerable error, it would seem that the value of the serum reaction has been thoroughly demonstrated.

Noguchi's method seems to be a distinct improvement over that of Wassermann or any of the other methods proposed for the reason that it is not so complicated and cumbersome; and the statistics seem to show that it is more accurate and more delicate. Thus, in a comparison of the Wassermann and Noguchi systems in 244 cases of syphilis and parasyphilitic conditions, as reported by Noguchi[3], the Wassermann system gave 183 and the Noguchi 211 positive reactions. Noguchi further states that in a series of 1,082 cases examined, in which there were a number of syphilis suspects, 802 positive reactions with the Noguchi test were obtained.

In a comparison of the Wassermann and Noguchi systems Fox[6] reports 210 cases examined with the percentages of positive reactions favorable to the Noguchi test. This series of cases included primary, secondary, tertiary, latent and hereditary syphilis, tabes, cases for diagnosis and non-syphilitic cases. In primary syphilis both the Wassermann and Noguchi tests showed 100 per cent. of positive reactions. In secondary syphilis the percentages of reactions were, Wassermann 97 per cent., Noguchi 100 per cent., in tertiary syphilis, Wassermann 71 per cent., Noguchi 84 per cent.; in latent syphilis, Wassermann 46 per cent., Noguchi 62 per cent.; in hereditary syphilis, Wassermann 100 per cent., Noguchi 100 per cent. (only one case reported); in tabes Wassermann 100 per cent., Noguchi 100 per cent. (three cases reported); cases for diagnosis, Wassermann 39 per cent., Noguchi 49 per cent. (53 cases reported). Of non-syphilitic cases, 2 cases out of 23 gave a positive reaction by Wassermann while 4 gave a positive reaction by the Noguchi test. One of these cases was afterward examined by Noguchi and gave a negative reaction.

In a similar series of cases reported by Kaplan,[7] out of 1,286 cases examined the positive reactions by the Wassermann test were 826 and by the Noguchi test 995.

Swift[8] in a carefully prepared article on "A Comparative Study of Serum Diagnosis in Syphilis," accompanied by numerous tables showing the number and kind of cases in which the serum diagnosis was tried, concludes that the Noguchi reaction is more readily applied and the materials are more easily procured and kept than with the Wassermann method. It is also more sensitive than the Wassermann reaction, though this increased sensitiveness sometimes causes a positive reaction with non-specific serums which gave a negative Wassermann reaction. Noguchi, however, states that these positive reactions with non-specific serum may be avoided by the use of inactive serum, and further that when one obtains a high percentage of positive reactions in non-syphilitic cases one should suspect that one is not doing the test properly.

Numerous investigators have attempted to determine the result of various forms of treatment on the syphilitic antibodies in the blood. It is known that the reaction frequently disappears after a short course of treatment, often to return again within a greater or lesser period of time. In some cases a positive reaction frequently persists in spite of treatment, and Noguchi states that in hereditary lues the reaction is difficult to get rid of, often persisting in spite of most vigorous interference. Frequent tests are necessary to determine whether further therapeusis is indicated. A positive reaction in a syphilitic case is an indication for additional treatment though it is not definitely established that the disappearance of the reaction is justification for the cessation of treatment.

It having been definitely established that by the serum test we are able to diagnose syphilis with more or less certainty, it is clearly evident that the test is going to prove of inestimable value to the ophthalmologist who constantly sees many cases of doubtful syphilitic origin. The method is used not only for the diagnosis of syphilis primarily but also as a guide to determine when treatment may be discontinued, or whether it should be resumed.

Up to the present time the reports do not show many eye cases in which the test has been used, though it is possible that some of the statistics in which the cases are grouped under the various types of syphilis may include some eye lesions. Noguchi reports only 29 cases of eye diseases in which his test was employed, and his table is here reproduced (see next page, Table 2).

In this series of cases it will be seen that nearly 50 per cent. of positive reactions were obtained. No reference is made to syphilitic history or the possible effect of treatment in causing a negative reaction in a case of syphilitic origin. Thus out of twelve cases of inter-

4. Williams: The Serum Diagnosis of Syphilis, Colorado Med., April, 1910.
6. Fox: Jour. Cutan. Dis., 1909, xxvii, 338.
7. Kaplan: Comparison of Noguchi and Wassermann Reactions. Table taken from Noguchi's Serum Diagnosis of Syphilis, 1910.
8. Swift, H. F.: A Comparative Study of Serum Diagnosis in Syphilis, Arch. Int. Med., October, 1909, iv, 376.

stitial keratitis, which in a very large percentage of instances is of syphilitic origin, but eight positive reactions were secured. It would be interesting to know whether any of these negative reactions occurred in patients reasonably free from the possibility of syphilitic infection or whether treatment had anything to do with the results secured from the test.

TABLE 2.—CASES OF EYE DISEASES TESTED BY NOGUCHI BY HIS METHOD

	Cases Examined	+	—	±
Keratitis interstitialis	12	8	4	0
Iritis	6	4	2	0
Scleritis	1	0	1	0
Paralysis external rectus	1	0	1	0
Optic neuritis	1	1	0	0
Chorioiditis (exudative)	1	0	1	0
Optic atrophy	5	0	5	0
Acromegaly with ocular symptoms	2	1	1	0
Totals	29	14	15	0

From Dr. Swift's tables I have been able to select ten cases of eye diseases in which the data is more complete. They may be arranged as in Table 3.

An analysis of these cases shows only one negative reaction by the Noguchi test, which was also negative with the Wassermann test, and this case was one of ocular palsy accompanied by blindness, of questionable syphilitic history though the patient had had much antisyphilitic treatment for two years previous to the test. It is probable that the negative reaction in this case was due to the treatment, and that earlier in the history of the case the reaction would have been positive. In one case of iritis, with papular eruption, the initial lesion having been six months before the test, the Wassermann reaction was negative and the Noguchi reaction was decidedly positive. In the case of optic atrophy and blindness, in which syphilitic infection was denied, the Wassermann reaction was questionable, and the Noguchi reaction was weakly positive. Of particular interest are the four cases in which the history of infection is indefinite or infection is positively denied, and the lesion is doubtfully syphilitic from clinical symptoms and manifestations. In three of these cases the Noguchi reaction is positive and in the one that is negative the patient had much treatment for two years preceding the test. In all of the other cases there was a history of infection leading to the supposition that unless the patient had had much treatment the Noguchi reaction would be positive.

With a view to determining the clinical value of the serum test for syphilis in eye diseases and especially those of doubtful etiology I took up the work several months ago and in carrying it on I have had the cooperation of my assistant, Dr. Norma B. Elles, and of Dr. C. G. Beall, to whom I am indebted for valuable assistance. Owing to the difficulties encountered in satisfactorily carrying out the test and eliminating the commoner errors in technic bound to occur at first, it was only recently that our results have been considered in any sense reliable. It is frankly admitted that the absolute accuracy of the reported findings may be questioned on the ground that errors in technic are more likely to occur with those who are not specially skilled in hemolytic work, and who have not had the advantage of a long and varied experience. But in view of the scarcity of literature concerning the value of the tests in eye diseases I have thought our results in a limited number of cases worthy of report, though it is hoped that a subsequent report covering a very much larger number of cases, and reviewing the results secured by others, will throw still further light on what, it seems, must eventually be one of the most important diagnostic means at the hands of the ophthalmologist for diagnosing eye lesions of questionable syphilitic etiology.

In all of the tests, only a portion of which are reported, fresh guinea-pig serum was used as complement. The amboceptor, consisting of the serum from immunized rabbits, was obtained from the laboratory of the Memorial Institute for Infectious Diseases, Chicago, though in some of the tests amboceptor slips which originally came from Dr. Noguchi, of the Rockefeller Institute, were used. Our antigen, made from the alcoholic extract of the liver of a congenitally syphilitic fetus, was also obtained in the form of antigen slips which had been carefully standardized.

TABLE 3.—SWIFT'S CASES OF EYE DISEASES TESTED BY THE WASSERMANN AND NOGUCHI REACTIONS

Time Since Appearance of First Symptoms	Present Manifestations	Treatment	Wassermann	Noguchi
Four months.	Maculopapular; iritis.	6 weeks bichlorid pills.	+	+
Three months.	Papular; iritis.	Eighteen inunctions.	++	++
Five months.	Iritis.	Four months.	+	+
Two years.	Conjunctivitis.	Fair.	+	++
Six months.	Papular; iritis.	Poorly.	—	++
Three years.	Iritis.	None.	++	+
Denied.	Keratitis, myositis.	None.	+	+
Denied.	Optic atrophy; blindness.	Not stated.	+—	+
Indefinite.	Ocular palsy; blindness.	Much in past two years.	—	—
Denied.	Syphilitic iritis.	Little.	++	++

Unfortunately the first tests, consisting of a number of cases, proved worthless owing to a poor quality of antigen, as well as one which had not been carefully prepared and standardized. In consequence some of these cases were either lost sight of when we finally got the tests working satisfactorily, or treatment modified the result. The ear, nose and throat cases, which were also studied in connection with the eye cases, are not considered in this paper.

The cases, with condensed history and results of test recorded, are given in Table 4.

An analysis of these cases shows that of the thirteen positive reactions ten were in patients giving no definite history of syphilitic infection, and only two of the eight showed other than eye lesions to indicate syphilitic infection. Seven of the number had received antisyphilitic treatment and probably to the treatment may be attributed some of the weak positive reactions secured.

Of the thirteen negative reactions six were in patients who gave no history of syphilitic infection and received no antisyphilitic treatment. One patient (Case 12) denied infection but presented many evidences of secondary manifestations of the disease and was kept on mercurial inunctions for a period of two years previous to the test and constantly improved under the treatment. She gave a negative Noguchi reaction and no doubt the vigorous mercurial treatment and absence of active syph-

ilitic lesions prevented a positive reaction. The same is true of Patient 26.

The four patients giving a history of syphilitic infection and treatment of the same probably gave negative Noguchi reactions because of the effect of the treatment. The lesions existing at the time of the tests were probably not syphilitic.

The patients suffering from or having suffered from interstitial keratitis would be expected to be syphilitic, and hence the Noguchi reaction in such cases would be positive except for the inhibiting influence of the treatment. The test in those cases, therefore, would be essentially valuable as indicating whether or not treatment should be discontinued or resumed.

In the cases of iritis, except Case 23 (neuroretinitis, hemorrhages into the vitreous, and paralysis of eye muscles) there was no obtainable syphilitic history, no lesions other than those in the eye, and the cause was questionable. The serum reaction was considered satisfactory in determining the possibility of syphilitic etiology, and the results of subsequent treatment seem to establish the reliability of the findings. Thus in Case 11 the test was strongly positive and active antisyphilitic treatment not only produced marked improvement in the eye lesion but probably was responsible for a weakly positive reaction six weeks later. In Case 12, with unquestioned syphilitic lesions, and under active mercurial treatment for two years, the reaction was negative. This is considered an indication for cessation of treatment. Tests will be given later to determine whether treatment should be resumed. The active corneal ulcerations are considered as due to the effects of cicatricial changes in the lids, producing mechanical irritation, and the introduction of non-syphilitic infection. Case 14, with no active lesion, is considered as requiring more antisyphilitic treatment owing to the positive Noguchi reaction. Case 18 is one that ordinarily would be diagnosed as syphilitic iritis, but the Noguchi reaction was negative and the patient promptly recovered on treatment other than antisyphilitic.

Various writers have asserted that the reaction frequently disappears after a short course of treatment, often to return again within a greater or lesser period of time. This would seem to be borne out by the results secured in the cases reported by Noguchi, Brück, Citron, Swift and others. In our cases treatment very evidently tended to cause a disappearance of the reaction, and those patients who had received considerable antisyphilitic treatment and exhibited no active lesions at the time of the test, showed a negative reaction. Positive reactions were reduced to weakly positive following active mercurial treatment. Whether a positive reaction will be obtained in these cases later, after an interval of rest in treatment, will be determined later. Noguchi says that in hereditary lues the reaction is difficult to get rid of, often persisting in spite of the most vigorous interference. In several of our cases of congenital syphilis we secured a negative reaction which was thought to be due to the inhibitory action of treatment. Noguchi also says that the reaction may return shortly after cessation of treatment, so that it may be necessary to make frequent tests to determine whether further

TABLE 4.—AUTHOR'S CASES TESTED BY THE NOGUCHI METHOD

No.	Sex	Age	History of Infection	Manifestations	Treatment Before Test	Noguchi Reaction
1	F	34	Indefinite	Ectopia lentis. Opacities cornea due to old interstitial keratitis.	Some treatment for congenital syphilis.	—
2	F	14	Congenital	Interstitial keratitis. Numerous scars at corner of mouth and on face. Saddle-nose.	Much treatment for inherited syphilis.	—
3	F	20	Congenital	Old adhesions of the iris. Blepharitis. Interstitial keratitis.	Now taking antisyphilitic treatment. (Mercury.)	+
4	F	17	Congenital	Hutchinson teeth and other signs of congenital syphilis. Opacities of cornea. No active lesions.	Much antisyphilitic treatment.	—
5	M	13	Congenital	Granular conjunctivitis. Ulcer of the cornea.	Unknown.	—
6	F	21	Indefinite	Argyll-Robertson pupil and optic atrophy.	None.	+ + +
7	M	15	Indefinite	Scars of cornea. Adhesions iris. Nystagmus.	Questionable antisyphilitic treatment.	—
8	M	15	Questionable	Scars on cornea. Active phlyctenular conjunctivitis et iritis.	None.	+ +
9	F	14	Congenital	Saddle-nose. Scars corner of mouth. Interstitial keratitis 1 year ago.	Mercurials for several weeks 1 year ago.	+ +
10	F	26	Questionable	Neuroretinitis.	None.	+ +
11	M	40	Indefinite	Paralysis sixth nerve.	None (after a month's mercurial inunctions Noguchi reaction + ; after two months' treatment still +).	+ + +
12	F	29	Denied	Maculopapular eruption; ulceration of pharynx and nose, and iritis two years ago. Old adhesions iris. Active corneal ulcerations.	Two years of active mercurial treatment (inunctions).	—
13	M	18	None	Hemorrhage into vitreous left eye. Obliterating endarteritis right eye with hemorrhages and dust-like opacities in vitreous.	None (after a month's mercurial treatment and pilocarpin sweats Noguchi reaction +).	+ +
14	M	8	None	Interstitial keratitis one year ago. Ulceration tonsil and pharynx six months ago, smears from which showed *Spirochæta pallida*.	Mercury inunctions irregularly for one year. (After one month's continuous mercurial inunctions and injections Noguchi reaction +).	+ + +
15	F	60	None	Third nerve paralysis. Neuroretinitis.	Mixed treatment and pilocarpin sweats for a week.	+
16	M	38	None	Central leukoma. Active iritis.	None.	—
17	M	25	None	Iridocyclitis.	None.	—
18	F	24	None	Old adhesions and exudate closing pupil left eye. Active iritis right eye.	None.	—
19	F	64	None	Neuroretinitis and floating opacities in vitreous both eyes.	None.	—
20	M	31	None	Repeated hemorrhages in vitreous left eye for three years. Slight hemorrhages vitreous right eye. Obliterating endarteritis and hemorrhages in retina right eye.	K. I. irregularly for several months. Mercury for past few days.	+
21	F	35	Indefinite	Two attacks iritis in last six years. Mild attack iritis within last two weeks. History of two miscarriages.	Unknown.	+
22	F	47	None	Active episcleritis.	None.	—
23	F	31	Denied	Active ulceration nasal septum and iritis eight years ago. Return of ulceration two years ago. Iritis and interstitial keratitis now.	Active mercurial treatment for three years. Six months of mixed treatment two years ago.	+ + +
24	M	54	None	Repeated subconjunctival hemorrhages both eyes for past three years.	Unknown. Probably antisyphilitic from description.	+
25	F	52	Indefinite	Aphasia and one-sided sensory paralysis and partial motor paralysis. Few small spots of disseminated chorioiditis. History of one miscarriage.	Inunctions and large doses K. I. for six weeks. (Has recovered from aphasia and paralysis.)	—
26	F	50	Negative	Large syphilitic ulcer left tonsil, smears from which showed *Spirochæta pallida* nine months ago. Old disseminated chorioiditis right eye.	Almost continuous inunctions for eight months.	—

therapeusis is indicated. But he admits that it is not definitely established that the disappearance of the reaction justifies stopping treatment, especially as the reaction may be quickly affected by treatment.

In conclusion it may be said that the reaction is destined to be of value to the ophthalmologist as an aid in making a diagnosis, particularly in cases of doubtful origin, and also as a guide to selection of therapeutic measures. But to be reliable and hence of most value the test should be applied to those cases of which a reasonable complete history has been obtained; the reagents employed should be prepared in an accurate and careful manner; the technic as advocated by Noguchi and others should be accurately followed; and the interpretation of the results considered in the light of the experience and skill with which the tests have been made. The reactions should be verified, and control tests should be introduced as often as possible. Furthermore, all things being equal, the results will be most reliable and hence most valuable when done by those with facilities and training for hemolytic work.

ABSTRACT OF DISCUSSION

DR. E. V. L. BROWN, Chicago: One recent article in regard to this reaction might be quoted, namely, that of Alfred Leber, of Berlin, which covers some 300 cases of the Wassermann reaction. Many of the data coincide with those of Dr. Bulson; for instance, 231 cases of eye diseases suspicious of syphilis gave a positive reaction in 40 per cent.; 71 cases of certain syphilis gave 79 per cent. of positive reactions; 22 cases of eye disease with metasyphilitic diseases, tabes, general paralysis and lues cerebri gave 82 per cent. of positive reactions. In 90 per cent. of 59 cases of hereditary eye lues there was a positive reaction. There were 82 cases of keratitis parenchymatosa, and of these 74 per cent. were positive. These included 63 per cent. of acquired and 11 per cent. of hereditary syphilis. In general, Leber states that the reaction is negative in 10 to 20 per cent. of syphilitic patients who have not been treated, and in 30 or 40 per cent. of those who have been treated. This very definitely restricts the application of the test. Leber has devised a complement deviation reaction for tuberculosis similar to the Wassermann reaction for syphilis. The technic is even more difficult than the Wassermann.

DR. ALBERT E. BULSON, JR., Fort Wayne, Ind.: The statistics quoted by Dr. Brown apply to the Wassermann reaction, while my paper is a consideration of the Noguchi reaction. I have reported comparative studies of the two reactions by competent observers, and the statistics presented seem to show that the Noguchi reaction is more reliable. For instance, in 244 cases of syphilis and parasyphilitic conditions, as reported by Noguchi, the Wassermann gave 183 and the Noguchi 211 positive reactions. In 1,082 patients examined by Noguchi, among whom there were a number of syphilitic suspects, 802 gave positive reactions. In another comparison of 210 cases of various kinds, in which there were a number of non-syphilitic cases and cases for diagnosis, the percentage of reactions was decidedly favorable to the Noguchi test. The Noguchi test, therefore, seems to be more accurate, and hence of much more value than the Wassermann test; but it must be remembered that the value of the Noguchi test depends in large measure on the virulency of the infection, the stage of the disease, the influence which anti-syphilitic treatment may have had in altering the reaction, the reliability of the materials employed and the care and skill with which they are used, and the manner of interpreting the results.

In the so-called attenuated forms of syphilitic manifestation the Noguchi reaction may be but faintly positive, and the same may be true in the more virulent forms which have been actively treated with anti-syphilitic remedies. In either case the findings are significant as aiding in the diagnosis and indicating the line of treatment to be pursued. The reaction will prove of inestimable value in ophthalmic cases of doubtful etiology, particularly in certain fundus lesions, various ocular paralyses and the uveal disturbances, and in those cases of known syphilitic origin in which it is desired to determine whether antisyphilitic treatment should be resumed or not.

It seems to be proved that the Noguchi test is more delicate and less complicated to employ than the Wassermann, and probably more accurate. Its value, however, will be greater when carried out by one thoroughly familiar with hemolytic work and skilled in laboratory technic. Even then the interpretation of the results of the test will have greater value with added experience in its use. In my series of cases the results of the test, while subject to the possibility of some error, due to unfamiliarity with the work, seemed to point to definite conclusions, and the findings in most of the cases were either verified by the previous history, the character of the lesion, or the effect of the treatment. At a future session I hope to present the results of further study of the test in a much larger number of cases, as also to summarize the results of others who may be carrying on similar work.

THE RELATION OF ANIMAL EXPERIMENTATION TO OUR KNOWLEDGE OF PLAGUE *

GEORGE W. McCOY, M.D.
Passed Assistant Surgeon, U. S. Public Health and M.-H. Service
SAN FRANCISCO

Comparatively few diseases of man are readily transmitted to laboratory animals. In plague, however, we have an infection that can be reproduced in many of the animals ordinarily used for experimental purposes. The question then arises as to whether we know more about this disease than we do about infections that are less readily transmitted to animals, and those that thus far have not been studied in the lower animals. In reply it may be pointed out how much more accurate knowledge we have of the essential cause of plague epidemics than we have of outbreaks of typhoid fever, scarlet fever, measles, typhus fever and others that might be mentioned. When plague is to be combated, there need be no speculation as to the source of the infection. The outbreaking is not to be attributed to such vague and indefinite sources as impure air, a bad water supply, or a mysterious contagious influence; but we know that the problem is the simple and direct one of eliminating the infected rodent. Attention may be called to the fact that, fortified by our knowledge of this disease, much of which has been gained by animal experimentation, we are able to take such effective measures against its spread that, at the present day, plague in a community may be promptly controlled and even eradicated. In substantiation of this statement, the epidemics that have occurred at various times in the past few years in Oporto, Rio Janeiro, Glasgow, Liverpool and other cities abroad, and in San Francisco and Seattle in the United States may be cited. It is not too much to say that without the knowledge of the disease gained from animal experimentation these sanitary victories would not have been won. It is quite true that, even with this knowledge, little can be accomplished unless we have the intelligent assistance and cooperation of the community afflicted. In contrast to the splendid achievements in the cities mentioned we may cite countries where plague annually claims an enormous toll of human life; for example, India, where fanaticism manifests itself in the form of a violent antagonism to the

* This paper is one of the series prepared for and reprinted by the Council on Defense of Medical Research of the American Medical Association for circulation among the public. Fourteen of these pamphlets are now ready, taking up the relations of animal experimentation to ethics, diagnosis, cancer, vaccination, the live stock industry, tuberculosis, typhoid, dysentery, plague, rabies, surgery, internal secretions, circulation of the blood, tropical diseases, etc

sacrificing of lower animals for any purpose, even such a laudable one as the suppression of a disease that on several occasions has claimed over one million victims per year. In China, there is no such antipathy to the taking of life of the lower animals, but there is found an ignorance and apathy most effective in nullifying any efforts looking to an improvement of sanitary conditions and surroundings.

Our knowledge of the cause of plague dates from the work of Yersin[1] and of Kitasato[2] in Hong Kong. These investigators, working independently, discovered the micro-organism that has since come to be universally recognized as the cause of the disease. They isolated the organism from the sick and from the bodies of persons who had died of the disease. The opportunity of reproducing the infection in laboratory animals was requisite to complete the chain of evidence necessary to establish the relation of the germ to the disease.

Prior to the work of the investigators mentioned, epidemics of plague were attributed to telluric and climatic conditions, to soil infection and to other sources. As a result of these erroneous views, intelligent measures looking to the suppression of the disease were impossible. The vigorous quarantines that were inaugurated, by reason of the hardship they inflicted, defeated the very purpose for which they were established.

Since the discovery of the actual causative agent of the disease, *Bacillus pestis*, progress in solving many of the problems has been rapid, and it may be asserted without fear of contradiction that every material advance has been made possible by the facts demonstrated by means of animal experiments. The subject will be considered first in the more important aspect, namely, the infected rodent, by means of which the disease is transferred from place to place and is spread in communities; and second, in relation to the preventing of the infection of individuals and in curing the sick.

RELATION OF RODENTS TO PLAGUE

Prior to the discovery of the organism causing the disease, the association of rat epizootics with outbreaks of human plague had been noted by several observers. That the oft-cited biblical verses,[3] which mention "emerods" and "mice," really referred to the association of plague and rats cannot be demonstrated; and the other early records are also the subject of much difference of opinion. The actual relation between the disease in rodents and that in man, however, had never been established. It was most important to prove this point, and to discover the actual manner in which the disease was spread among the rodents, and if possible, the manner in which man was infected from rodents. To these problems several investigators turned their attention. It is needless to point out that these questions could not be settled without recourse to animal experiments.

The earlier workers had found the plague bacillus in the bodies of insects that had fed on the blood of animals sick of the disease but it remained for Simond[4] to actually convey plague from one animal to another by means of insects (fleas). Simond found that when fleas were placed on a plague-infected rat they drew blood containing the plague bacillus, and that by transferring these infected fleas to a healthy rat the disease could be transmitted. Subsequently certain observers failed to confirm this work, but as is so often demonstrated, one properly controlled positive result is of more value than many negative ones. Simond's work was confirmed by Verjbitski[5] who succeeded in transferring the infection from rodent to rodent by means of fleas and other insects. Verjbitski's results were verified for the most part by the investigators of the Advisory Committee appointed by the Secretary of State for India, the Royal Society and the Lister Institute.[6] By means of an extensive series of experiments these observers found that plague infection would not spread among rats except in the presence of fleas. The same fact was found to hold good in the case of guinea-pigs. In other words, it was found that healthy rats and healthy guinea-pigs might be kept in close contact with plague-sick rodents, but that the disease was never transmitted to the well ones unless fleas were present. While this evidence was of great value in throwing light on the probable mode of transmission of the disease from rodents to man, or possibly from man to man, it was desirable to conduct experiments with animals more closely related to human beings, and for this purpose monkeys were used.[7] The monkeys were placed in cages in such a way as to simulate so far as possible the conditions under which man might be brought in relation to fleas from infected rodents. It was found that it was possible in this manner to convey plague to the monkeys.

Other most instructive and interesting experiments were performed by placing guinea-pigs in houses where plague cases had occurred, or where plague rats had been found. Many such houses were found to be infected as was shown by the fact that the guinea-pigs died of plague, and plague-infected fleas were found on them. In addition to these animal experiments, epidemiologic observations were carried out which together with the laboratory observations go far towards showing that, at least in India, the great majority of cases of plague are due to infection of man from rats through rat fleas.

Part of the work of this committee has been repeated by Kitasato[8] who reaches the conclusion that in Japan in the majority of cases the infection is conveyed in the same way as in India.

It may be thought that the presence of an epidemic among rodents under natural conditions would be manifested by so large a mortality among these animals as at once to make manifest the presence of the disease. Such, however, is not the case; it is exceptional to find a death-rate among the rodents large enough to attract the attention of the casual observer. With the exact knowledge of the mode of the conveyance of the infection and its relation to rats, the lines along which work must be performed to control an epidemic become well defined.

The demonstration of the relation of the disease in man to that in the rat, and the mode of conveyance from the latter to the former, explain many of the facts long known about plague epidemics such as the lack of contagiousness, the gradual, almost mysterious, spread through a community and through a country.

The measures for the control of a plague epidemic do not come within the scope of this paper, but we may state that they are essentially the ridding of a community of infected rats. We may be pardoned for emphasizing here what has been so often pointed out, that plague is not a "filth disease" in the ordinary sense of the term. Plague in human beings is definitely associated with the

1. Yersin: Ann. de l'Inst. Pasteur, 1894, viii, 662.
2. Kitasato: Lancet, London, 1894, ii, 428.
3. I Samuel, vi, 5-11.
4. Simond: Ann. de l'Inst. Pasteur, 1898, xii, 625.
5. Verjbitski: Transl. in Jour. Hyg., 1908, viii, 162.
6. Jour. Hyg., 1906, vi, 421.
7. Jour. Hyg., 1906, vi, 464; 1907, vii, 432.
8. Kitasato: Ztschr. f. Hyg. u. Infektionskr., Nov. 26, 1908, p. 279.

same disease in rodents, and ordinary sanitary measures have comparatively little influence on its spread. It can be controlled and prevented only by measures directed to the actual cause, the infected rodents.

What has been said thus far refers particularly to the bubonic type of plague, which is by far the most common in all epidemics and in all countries. The pneumonic type of the infection is also very important, especially for the reason that it is directly contagious from person to person, and has claimed many physicians and nurses for its victims. This type of the disease was described by the German plague commission[9] and by Childe[10] and its origin traced to the same micro-organism that is responsible for the more common bubonic type. It would have been impossible to prove that the pneumonic form of the disease was due to the plague bacillus but for the valuable assistance rendered by the methods of animal inoculation. Only less important than the relation of rat plague to human plague is the relation of plague in ground-squirrels to the same disease in man. This is especially true in America, for it is established beyond question that cases of plague in human beings have been derived from ground-squirrel infection.[11] It would have been impossible to prove the presence of plague among ground-squirrels on the Pacific Coast without resorting to animal experiments. Who would have accepted the diagnosis of squirrel plague had it been based on morphologic and cultural studies alone? Certainly no trained observer and probably no intelligent layman. It has often been found that the demonstration of plague in laboratory animals carries to the mind of the layman a conviction that nothing else will.

In most countries and in most communities the announcement of the presence of plague is a signal for a violent denunciation of those who have discovered or announced the presence of the disease; and if one were compelled to rely on methods of investigation other than the inoculation of animals it is probable that skeptics would never be convinced. It is most gratifying, and an evidence of the rapid progress in sanitary matters, that since the first announcement of plague among ground squirrels on the Pacific coast[12] no voice has been raised to question the diagnosis.

Two methods of inoculating laboratory animals with plague are in common use. The one is by the use of the ordinary hypodermic syringe; the second, usually known as "vaccination" or Kolle's method, requires simply the shaving of the skin and the rubbing of the suspected tissue or culture on the shaven area. Neither method is painful.

Now as to the use of laboratory animals in establishing the diagnosis of plague in persons or in rodents: In the majority of cases of plague a probable diagnosis can usually be made by clinical and microscopic methods; but in other cases it is necessary to resort to animal inoculations. Especially in the case of plague in rodents, resort to animal tests frequently becomes indispensable, as the tissues are apt to be invaded by other micro-organisms which speedily outgrow the plague bacillus so that methods other than the inoculation of animals are likely to fail. It is obvious that in order that measures looking to the protection of persons may be taken, a positive diagnosis is essential.

9. Deutsch. med Wchnschr., 1897, xxiii, 301.
10. Childe: Brit. Med. Jour., 1897, i, 1215.
11. Jour. Infect. Dis., Dec. 18, 1908, p. 485; Pub. Health Rep., Jan. 14, 1909, p. 27.
12. Pub. Health Rep., Sept. 11, 1908, p. 1289.

Animal experimentation is the only means at our disposal for determining the species that are susceptible to the disease, and thus learning which animals must be regarded with suspicion and which may be eliminated from consideration as possible agents in spreading the disease. This may be illustrated by two examples:

The first relates to the gopher, a very common rodent. When the squirrel-plague campaign was begun on the Pacific coast, the question arose as to whether it was necessary to destroy gophers as well as ground-squirrels. As a result of certain experiments that had previously been made with gophers at the Plague Laboratory, it was proved that the susceptibility of these rodents was so slight as to make it unlikely that any measures would need to be taken against them. Thus the lives of many of the little animals were spared without in any way lessening the value of the work from a sanitary point of view. It is only fair to say that farmers probably would have been much better satisfied had we not intervened in behalf of the little nuisances that are so destructive to certain crops.

Another field of usefulness of animal experimentation in relation to plague is illustrated by the following: In 1903, Simpson, a well-known student of the disease, made the assertion that the domestic animals and fowls found in Hong Kong, the meat of which was used for food, were susceptible to plague infection, and in his opinion constituted a possible source of danger. The determination of the facts in the case was obviously a matter of the greatest importance, and other workers took up the subject with the result that Simpson's findings were discredited[13] and a source of confusion and error was eliminated. It would have been out of the question to disprove definitely the erroneous statements without recourse to animal experiments.

Another field of usefulness of animal investigation in relation to plague is the search for a biologic agent that will cause an epizootic among rodents that will exterminate these pests but will not harm human beings or useful domestic animals. Unfortunately, up to the present time nothing fulfilling the requirements has been found. The usefulness of such agents can be determined only by conducting feeding experiments with rats and other rodents. The layman is very likely to be misled by the glowing advertisements of the biologic products that are on the market, and if they are used on a large scale with unfavorable results, a false sense of security is engendered and money is wasted that could have been spent profitably in other ways.

In the consideration of the relation of animal experimentation to the plague question, one must never lose sight of the fact that large numbers of rodents suffer from the disease in nature, and it is certainly no exaggeration to say that for each rat, guinea-pig or squirrel that has succumbed to the disease as a result of experimental inoculations, thousands of rodents have died of the same disease under natural conditions. The animal infected in the laboratory dies in peace and perhaps has his sufferings cut short by the merciful use of an anesthetic, while his brother infected in the ordinary course of events in nature is very apt to have his sufferings cut short only by the less merciful attentions of his cannibalistic comrades.

To follow to a logical conclusion the doctrine that animals should not suffer for the benefit of mankind would effectually put an end to the warfare against rodents; not only that conducted as a measure against

13. Jour. Hyg., 1908, viii, 209.

disease, but as well that conducted by almost everyone on purely economic grounds. Traps and poisons are not merciful in their effects, and those who deplore the sacrifice of animal life made necessary by the advance of science would probably not hesitate to take measures looking to the destruction of the rat that has the pantry or the granary for the field of his activities.

PROPHYLAXIS AND TREATMENT

The matter of prophylactic measures that may be used to prevent plague infection or reduce the liability to it are clearly of great importance. The question of artificial immunization to plague is a subject that has received the attention of a number of observers. Haffkine's work along this line has given us a valuable weapon in the combating of plague. He injects killed cultures of the plague bacillus into persons with the object of creating a degree of immunity to the disease that would enable one to resist the invasion of the infecting organism. The method has been widely used in India and less extensively elsewhere. There is some difference of opinion as to the value of the procedure, but there is a very general agreement that no harm is done when the prophylactic is used with proper care. An unfortunate accident which occurred in connection with the use of Haffkine's prophylactic has materially interfered with its wider use. This accident was the infection of a number of persons with tetanus at the time of inoculation. The matter was made the subject of a rigid investigation and the evidence indicated that the tetanus was due to the accidental contamination of a vial of the prophylactic while the latter was being prepared for use by a native assistant. Even had the accident been due to the improper preparation of the agent it simply would have pointed out the necessity for the utmost care in the manufacture of the prophylactic.

Haffkine and Bannerman[14] in reviewing the work with Haffkine's prophylactic show clearly that there is a much reduced case incidence among the inoculated, and a startling reduction in the mortality of those in whom inoculation has failed to prevent infection. A particularly striking series of cases reported by Haffkine[15] is that of a large series of numbered prisoners who were confined in a jail where plague prevailed. Those who bore even numbers were inoculated, while those having odd numbers were not inoculated. Among the uninoculated there occurred ten cases of plague, six of which were fatal; while among the inoculated there were three cases, all very mild and all of the patients recovered. Other series of almost equally striking cases might be cited. Forsyth,[16] in an analysis of the figures of many thousands of cases, shows that the plague incidence among the inoculated was less than one-third of that among the uninoculated, while the mortality among those who had received the prophylactic was only 17 per cent.; and among those who had had no previous treatment it was 45 per cent. In other words, the chances of dying of plague were about eight times as great for those who had not received the prophylactic treatment. Numerous other reports of the same tenor might be adduced to demonstrate the value of the measure.

Strong[17] advocates the use of living but attenuated cultures of the plague bacillus for the purpose of immunizing persons. This method has not been largely used, but the evidence that exists is in favor of the procedure.

The whole subject of artificial immunization has been developed in relation to plague as well as in relation to other diseases by means of experiments on lower animals, especially rats and guinea-pigs.

Now let us state very briefly what animal experimentation has enabled us to do for the person actually stricken with the disease. In 1895 Yersin, Calmette and Borrel[18] found that after animals were injected with killed cultures of the plague bacillus, the serum of the animals so treated acquired the power of preventing the development of plague in animals that were simultaneously infected, and in curing animals already sick. The serum for this purpose is now on the market as an article of commerce. It has been used in thousands of cases of the disease in all parts of the world. There is a general agreement of opinion that when administered in sufficient doses and sufficiently early in the disease, it constitutes a very efficient remedy. Unfortunately the cases are rarely diagnosed early enough to give the patient the full benefit of the serum. Chocksy[19] says:

> "Much depends on the early and free use of the serum. In patients injected on the first day or within a few hours of the onset of the symptoms one injection of 100 c.c. followed by another after six to eight hours and then if necessary by a third, after a similar interval would cut short the attack if the case be not pneumonic, malignant or septicemic."

There is very good reason for believing that with the exception of the use of the serum, treatment has scarcely any influence on the course of the infection.

Laboratory animals must be used in the preparation and the testing of prophylactics and the curative serum. No other method is available, and to prohibit animal experimentation would immediately and effectually stop all work and all progress along these lines as well as along other lines of investigation of plague.

CONCLUSION

To review briefly, we may say that in the past by means of animal experimentation there has been demonstrated the cause of plague, the means by which it is conveyed in nature from animal to animal, and from lower animals to man. At the present time we have effective means of controlling outbreaks of the disease, and of curing many of the sick. So much has been accomplished in the past that we may fairly hope that later investigations will still further extend our knowledge of the disease.

If I might be permitted to suggest the lines along which we may expect progress they would be as follows:

1. The discovery of methods of rodent extermination more perfect than those we now have.
2. The development of a prophylactic agent that could be used without inconvenience on a large mass of the population.
3. The preparation of a curative serum, potent enough to make it useful even in late cases of the disease.
4. The discovery of a reliable method of early diagnosis of human cases without awaiting the results of culture and inoculation experiments. This will probably be in the nature of a test similar to the ocular reaction in typhoid fever or the cutaneous reaction in tuberculosis.

14. Haffkine and Bannerman: Brit. Med. Jour., 1898, ii, 856.
15. Haffkine: Brit. Med. Jour., 1899, ii, 11.
16. Forsyth: Lancet, London, 1903, ii, 1646.
17. Strong: Philippine Jour. Sc., 1907, ii, 159.
18. Yersin, Calmette and Borrel: Ann. de l'Inst. Pasteur, 1895, ix, 589.
19. Quoted by Strong, Philippine Jour. Sc., 1907, ii, 291.

5. The circumstances governing the alterations of virulence of the bacillus.

All progress in the directions indicated will have to come about as a result of experimental work done on lower animals. Will any reasonable person say that this work must be stopped because it requires the sacrifice of even a large number of rodents? Shall the achievements of the past, splendid though they are, be the measure of what we shall know about this disease that claims so many victims and causes such enormous commercial losses? I believe that these questions may be left safely to the judgment of any unbiased person.

THE FILTERING CICATRIX FOR CHRONIC GLAUCOMA

WITH A REPORT OF CASES IN WHICH OPERATION WAS PERFORMED BY THE METHOD OF LAGRANGE *

ALLEN GREENWOOD, M.D.
BOSTON

Ever since the general acceptance of von Graefe's classical operation of iridectomy as the best operative treatment in the majority of cases of glaucoma, ophthalmic surgeons have observed that, in cases of chronic glaucoma, a more permanent benefit was often obtained in those in which, through some fault in technic, a cystoid scar resulted. Such a scar usually came about as the result of some entanglement or prolapse of shreds or tags of iris, with evidences that the anterior chamber communicated with the cystoid cavities by fistulous tracts. This observation led to deliberate attempts to produce such scars, and some operators advised leaving a bit of iris tissue somewhere in the wound for this purpose. Others, like de Wecker, Priestly-Smith and Critchett, while acknowledging the possible benefits, pointed out the dangers of infection and sympathetic disturbance from this procedure. In spite of this warning, several operators have recently advocated this method of making fistulous cystoid cicatrices, the most radical being Maher,[1] who, after making the usual incision, drags a section of the underlying iris from its attachment and leaves the loop prolapsed, to be cut off several days later, in such a manner as to leave a tag of iris in either corner of the wound. To lessen the danger in such cases, Herbert[2] advised covering the prolapse with a conjunctival flap made at the time of the incision. Holth[3] also tries to minimize the dangers by his new operation called "iridencleisis antiglaucomatosa," which he describes at length with its various incisions and modifications of iris treatment. The modification which he esteems the highest, and which he considers gives the best results, is that of subconjunctival incarceration of iris tissue combined with extrasphincteric iridectomy. He reports some excellent results and clearly establishes the possibility of creating a fistulous passage between the anterior chamber and the subconjunctival spaces with a reasonable amount of certainty. Holth's operation is far safer than Maher's and a step forward, but it remained for Lagrange to work out the possibility of obtaining filtering or fistulous scars free from iris tissue.

Ophthalmic surgeons, who have been accustomed, in operating for cataract, to make their incisions far enough back to get a good conjunctival flap, had noticed that the flap often remained edematous or even bleb-like for some time after healing had taken place, and in a few cases, for years after, with the added observation that pressure on the eye would increase the edema or bleb with a decrease in tension and a partial emptying of the anterior chamber. Herbert especially called attention to this, and the explanation is found when one reads McKechnie's[4] most excellent article on the healing of variously placed cataract incisions.

Lagrange[5] reasoned that if this occasional undesirable sequel of flap extraction, with its fistulous communication between the anterior chamber and subconjunctival space, could be brought about in all cases of iridectomy for chronic glaucoma, the likelihood of future increases of tension would be greatly lessened, and the cure produced by the iridectomy made more permanent. The description of the operation which he therefore devised and called sclerecto-iridectomy, with the very excellent cuts, has been repeated so often that it is unnecessary to give a full description here.

Briefly, it consists in a sclerocorneal incision well into the angle of the anterior chamber, with the knife held, in cutting out, with the edge slightly backward so as to bevel the sclera and make a broad conjunctival flap. Then with the conjunctival flap pulled down over the cornea, a portion of the beveled edge of the sclera is cut off with curved scissors, the amount varying with the degree of plus tension, as experience shows that the greater the tension the less the amount necessary to remove. A good iridectomy is then made and the conjunctival flap replaced after all iris tissue has been freed from the angles of the incision. In regard to this latter point, Lagrange holds that his operation has not been properly performed if any entanglement of iris tags occurs. He reported some very encouraging results. I have performed the Lagrange operation now nine times and have not found it especially difficult or very disturbing to the eye, the amount of traumatism being less than one would expect. I find the curved modification of de Wecker's iris scissors the best to cut the beveled sclera.

Herbert,[6] in describing his wedge isolation operation, says:

> The term filtering should be restricted to smooth, even scars, which evidently allow aqueous to pass through them, but which present no dark points which we can accept as fistulous openings. The fact of filtration is shown by the edematous condition of the overlying conjunctiva, and particularly by the fact that pressure on the eye causes a marked increase of this edema, often amounting to a bleb and a marked lowering of the tension of the eye.

This operation I have never tried, as the operation of Lagrange appealed to me as being less complicated and more likely to give a permanent result. Herbert claims that his operation creates a true, filtering cicatrix, but that the operation of Lagrange creates a subconjunctival fistula. Granting that this statement be true, it still would seem to me that a tiny, subconjunctival fistula, or group of fistulas, would be more likely to remain permanent than microscopic filtering spaces in scleral scar tissue.

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* Read in the Section on Ophthalmology of the American Medical Association, at the Sixty-first Annual Session, held at St. Louis, June, 1910.

1. Maher: Ophth. Rev., July, 1909.
2. Herbert: Tr. Ophth. Soc. U. Kingdom, June, 1903.
3. Holth: Ann. d'ocul., May, 1907.
4. McKechnie: Arch. d'ophth., May, 1909.
5. Lagrange: Arch. d'ophth., August, 1906.
6. Herbert: The Filtering Cicatrix in the Treatment of Glaucoma; an Improved Operation, Ophthalmoscope, June, 1907.
7. Henderson: Ophthalmoscope, December, 1907.

Thomson Henderson,[7] in an article, written from the standpoint of a pathologist, on the so-called filtering cicatrix, described the processes of healing of corneal wounds, especially those made at the limbus, pointing out the fact that "after an incision into the anterior chamber, whatever its position, or method, or formation, the endothelial cells go along with internal margin of the wound and so come to seal it off. Once the growth of endothelium is complete, the wound is no more a filtering cicatrix, but is shut off from the anterior chamber by a layer of new-formed endothelial cells, which proceed to lay down a new homogeneous membrane between the cut surfaces of Descemet's membrane." It is this endothelium that precludes, according to Henderson, all possibility of a permanent filtering cicatrix following any operative incision, however devised. He says in concluding:

I would emphasize the fact that the success of operation in glaucoma does not lie in a "filtering" wound but in the accompanying iridectomy. The reason of the beneficial and curative action of iridectomy in glaucoma is accounted for by the fact that the cut iris surface, forming the base and pillars of the coloboma, never undergoes any reparative process, but always remains a raw, open wound, as when first severed, so acting as a permanently open filtering area through which the aqueous fluid can drain away. The efficacy of this drainage area depends on the operation being done before atrophy of the iris stroma has progressed too far.

He seems to make out a very clear case against the permanence of the filtering scar as defined by Herbert, but does not disprove the possibility of the fistulization of an iris-free cicatrix. He does not explain away the observation of the several operators who have seen cicatrices, without macroscopic evidences of fistulization, that would allow the emptying of the aqueous into the subconjunctival spaces following pressure on the globe.

Abadie[8] has also expressed a pathologist's disbelief in the filtering cicatrix, asserting that in simple section of the iris must be sought the true remedial agent. He regards it as established that "(1) Lagrange has so far failed to furnish satisfactory proof that simple chronic glaucoma can be cured by sclerectomy; and (2) glaucoma cured by sclerectomy or by iridosclerectomy might equally well have been cured by iridectomy, a simpler and less dangerous operation."

Dr. Doyne[9] reported a favorable case done before the surgeons at the Oxford Congress by Lagrange, but does not mention the ultimate success as to filtration.

Dr. J. E. Weeks[10] presented four cases to the Section on Ophthalmology at New York Academy of Medicine, stating that the operation impressed him favorably.

Thompson[11] presents very clearly and concisely the gist of the controversy on the so-called filtering cicatrix. He says: "Nothing in ophthalmology could well be of greater importance than the determination whether or not an iris-free filtering cicatrix can be made in the corneo-scleral margin, when operating for chronic glaucoma." He then goes on to describe the claims of Herbert and Lagrange, who, by their operations, are trying to establish a permanent path for the passage of aqueous from the anterior chamber into the subconjunctival tissue. He then gives Henderson's views as to the impossibility of making a permanent, iris-free, filtering scar, such as Herbert claims to obtain.

Lagrange[12] steps into the arena again, with a very able defense of his operation. In regard to the cystoid cicatrix, he makes the following very timely remarks: "A cystoid cicatrix, obtained at the price of an entanglement of the iris, is unwelcome and dangerous, and one should aim at creating a cicatrix fully as filtering as the cystoid one, without the uveal tract participating in its formation." He insists on going with the section through the ligamentum pectinatum iridis and dividing the insertion of the ciliary muscle, so as to establish a communication between the lymph spaces of the chorioid and the anterior chamber. He shows that von Graefe and de Wecker both understood the usefulness of the filtering cicatrix, but he gives to de Wecker the credit of having brought into prominence the value of this cicatrix. He also shows that de Wecker was opposed to the entanglement of iris in the efforts to obtain such a cicatrix. He goes on to describe the utility of the filtering cicatrix, and shows that "when it occasionally follows a simple iridectomy it is the result of the hypertension of the eye, and does not occur in chronic glaucoma without this hypertension." In such cases of glaucoma he states that iridectomy has no value, or but a passing one, because the lips of the wound fall into apposition, either immediately after the incision or more or less quickly after the section has been made. "Dieresis must be replaced by exeresis, since by the former it is impossible to produce a definite filtering cicatrix, which, on the contrary, one can get readily by exeresis of the sclerotic." He says:

My operation of sclerecto-iridectomy has the primary advantage of opening up a communication between the choroidal space, on the one hand, and the aqueous chamber on the other. It satisfied, therefore, the wants of those who believe that chronic glaucoma largely depends on the obliteration of that space. In the second place, it does away with the obstruction of the angle of the anterior chamber, when such exists, and lastly, it establishes a communication between the aqueous chambers and the perichoroidal space and the meshes beneath the conjunctiva.

He describes three varieties of the filtering cicatrix based on the amount of sclera removed and the result of such removal. In the first variety there is the simple thinning of sclera; the second is the so-called subconjunctival fistula; and the third variety, in which there is ampulliform elevation of the conjunctiva added to the fistulization, resembles a cystoid cicatrix, but without the entanglement of iris. Lagrange states that since he began to operate on patients with a view of obtaining this form of the cicatrix he never has seen the least damage result from the operation.

Lagrange,[13] in a communication made to the Paris Ophthalmological Society, reports cases of simple sclerectomy giving successful results, which he considers more convincing proof of the value of the filtering cicatrix than cases of the combined operation, and especially is this true of the cases, like Valude's,[14] yielding good results where a previous simple iridectomy had failed. In concluding, Lagrange advises simple sclerectomy for cases having a tension of + 1 or less, reserving the combined operation for those having a greater tension. Later, Lagrange[15] answers M. Abadie's four objections to the operation of sclerecto-iridectomy, giving the clinical proofs in support of his claims.

Weekers and Heuvelmans[16] demonstrated, by experimentation on the eyes of rabbits, that it was possible to obtain a filtering cicatrix. They concluded from their experiments that it was necessary to excise a portion of

8. Abadie: Arch. d'ophth., January, 1909.
9. Doyne: Ophthalmoscope, June, 1908.
10. Weeks: Arch. d'ophth., May, 1908.
11. Thompson: Ophthalmoscope, February, 1908.
12. Lagrange: Arch. d'ophth., February, 1908.
13. Lagrange: Arch. d'ophth., August, 1908.
14. Valude: Ann. d'ocul., May, 1908.
15. Lagrange: Arch. d'ophth., November, 1908.
16. Weekers and Heuvelmans: Arch. d'ophth., November, 1909.

the whole thickness of the sclera, and as near the cornea as possible, in order to obtain a fistulous opening. They also state that it is necessary to do an iridectomy in most cases to prevent the inclusion of iris tissue in the opening.

Rochon Duvigneaud,[17] in discussing the Lagrange operation, and describing two cases, insists that the third variety of the Lagrange filtering cicatrix must be obtained if permanent reduction of tension is aimed at, that the simple thinning of the sclera obtained in the first variety is in no sense a filtering area, and that the improvement obtained in cases of chronic glaucoma, having such cicatrices, is due solely to the accompanying iridectomy. Apropos of the first variety of the Langrange cicatrix, Bettremieux[18] has endeavored to lessen the resistance of the sclera by grooving it near the cornea, without opening the anterior chamber.

Holth[19] describes a modification of the Lagrange operation, in which a modified Dr. Vacher punch forceps is used to remove the bit of scleral tissue. He tried taking the rounded piece of scleral tissue from the posterior lip of the wound, but finally decided to follow the method of Lagrange and take it from the anterior lip, using the punch forceps instead of the scissors.

Holth considers that the following three conditions must be fulfilled before an operation for the cure of glaucoma by the production of a fistulous cicatrix can be considered to have answered the purpose for which it was devised. He postpones publication of his results until sufficient time has elapsed to allow of their being fulfilled in a series of cases:

1. There must be conjunctival edema over and around the scleral wound, showing the presence of a subconjunctival fistula.
2. The tension must be constantly normal or subnormal, as shown by the tonometer.
3. For two years after the operation, the visual acuity and fields (which often improve to a marked extent) must not become worse than they were before.

Finally, Holth expresses his opinion that, although the classical iridectomy is still indicated in acute glaucoma, yet Lagrange's idea was a most happy one, and that anterior subconjunctival sclerectomy is destined to be the basis of all the future surgical treatment of chronic glaucoma.

Major Elliott[20] concedes that Herbert and Lagrange have proved their case, but considers that "the operation of Herbert is a difficult and complicated procedure, and that the operation of Lagrange, while less difficult, offers some risks," while the operation he advocates can be easily performed, and without the same risk. Briefly, his operation consists in trephining at the limbus with a 2-mm. trephine, leaving the button in place, or removing it with the trephine or scissors and forceps. In most of his cases the button was removed, and in some, twenty-one out of fifty, a small button of iris was removed. Fifty patients were operated on, and in no case up to the time of publication had the operation failed to relieve tension.

In another article[20] Major Elliott reports four cases showing the evidences of a filtering cicatrix a long time after operation; the first, eighty-six days; the second, three and one-half years; the third, seven and one-half years; and the fourth, ten years. The last two of these appeared to owe their filtration to tiny fistulization. His communication, he states, is simply a preliminary note on a new operative procedure for the establishment of a filtering cicatrix in the treatment of glaucoma. At the December meeting of the New England Ophthalmological Society, Dr. Verhoeff[21] presented a circular punch based on the principle of the bicycle tire punch, which will remove a button of sclera at one or both ends of a sclerocorneal incision, with a minimum of traumatism. He first cuts a conjunctival flap, which is pulled down over the cornea, and a sclerocorneal incision is then made with a keratome. The little rounded guard of the punch is then slipped into the wound, and to one corner, when by screwing down the sharp-edged cylinder, the button is cut and removed with the instrument. A small extrasphincteric iridectomy is then made. Fergus[22] also recommends a similar modification of Lagrange's operation by using the trephine, which is applied far enough back to avoid opening the anterior chamber, to which he adds a modified cyclodialysis obtained by pushing a repositor between the exposed ciliary body and the sclera, until its point comes into the anterior chamber. He has, therefore, modified the operation of Heine rather than that of Lagrange. Stephenson[23] reviews the use of the trephine in the treatment of glaucoma, calling attention to its advocacy by Argyll-Robertson thirty-four years ago, and later by Blanco and Frölich. These operators removed the scleral piece posterior to the ciliary body, while Fergus, Elliott and Verhoeff, now remove the disc from a point nearer to the limbus.

In 1905, Heine brought out his operation of cyclodialysis for the establishment of a passage for the escape of aqueous from the anterior chamber into the suprachorioidal space, and in the discussion of the question of a filtering cicatrix it would seem proper to bring up the question of this operation, which, however, could hardly be compared with the true filtering cicatrix, in that the passage of aqueous into the suprachorioidal space, following cyclodialysis, has been proved to be only temporary. The operation, however, is of value in certain classes of cases in which a sudden emptying, or partial emptying, of the anterior chamber is unwise. In such cases, Heine's operation should not constitute the whole treatment, but should be employed preliminary to a Lagrange, or some of its modifications. It is especially indicated in cases in which there is a high degree of tension with a marked sclerosis of the retinal arteries and consequent danger of hemorrhage, and particularly in those cases in which the fellow eye has been lost by reason of such an accident. Weekers[24] reports on five cases, in which Axenfeld operated after Heine's method, and which gave disappointing results in that the tension fell only to rise again. The operation devised by Fergus may prove to be a modification of the Heine, with the advantage of more permanent results. Fuchs has tried trephining, but operating away from the cornea, and only found that temporary relief was obtained. He has also tried Heine's operation, but has given it up as it did not permanently cure the condition, and as on pathologic examination it was shown that in cases in which cyclodialysis had been performed cicatrization completely occluded the spaces between the anterior chamber and the perichorioidal space. Arnold Knapp[25] reports a number of favorable results following the use of Heine's operation in his hands, but the gen-

17. Duvigneaud, Rochon: Arch. d'ophth., March, 1908.
18. Bettremieux: Clin. Ophth., August and September, 1907.
19. Holth: Ann. d'ocul., July, 1909.
20. Elliott: Ophthalmoscope, December, 1909.
21. Verhoeff: Ophthalmoscope, March, 1910.
22. Fergus: Ophthalmoscope, February, 1910.
23. Stephenson: Ophthalmoscope, February, 1910.
24. Weekers: Klin. Monatsbl. f. Augenh., August-September, 1907.
25. Knapp, Arnold: The Operative Treatment of Glaucoma by Cyclodialysis, THE JOURNAL A. M. A., Sept. 4, 1909, liii, 765.

eral opinion of surgeons who have tried the operation seems to be that it is not permanent enough in its effects to generally replace iridectomy for chronic glaucoma, while the Lagrange operation, or some of its modifications, seems to be growing in favor.

CASE 1.—*History.*—The patient, F. M., aged 23, watchmaker, came to me Sept. 13, 1907. The case is especially interesting on account of the youth of the patient. The family history is also interesting in that the mother, at the age of 46, came to me with absolute glaucoma of the right eye, which, not yielding to iridectomy twice performed, required removal. Outside of glaucoma in the mother, there is no other family history of importance in the case. For three months before the patient came to me, the sight of the right eye had gradually failed with occasional attacks of discomfort, and the constant appearance of a rainbow around lights. On waking up in the morning both eyes were slightly congested, but this passed off in a very few hours.

Examination.—This showed the right eye vision equal to perception of light and perception of movements in the temporal field only. Tension + 1, and the pupil slightly dilated with anterior chamber shallow. The fundus showed a cupping of the disc amounting to three diopters with the retinal arteries pulsating. The left eye showed a vision of 20/30, field of vision normal, pupil slightly dilated and anterior chamber slightly shallowed, tension possibly slightly above normal, but difficult to determine owing to inability to compare with the normal eye. The fundus showed a cupping of about two diopters. Arterial pulsation only on pressure. In both eyes the optic discs were unusually large with the cupping sharply at the edge of the disc and sclera, with the vessels disappearing momentarily, entirely, in both eyes. The right eye showed entire loss of the nasal field up to the middle line.

Filocarpin was immediately ordered and arrangements made for the patient's admission to a hospital for operation. The pilocarpin reduced the tension in the right eye, and contracted the pupils well, improving the vision in the right eye to counting fingers at two feet, in the temporal field, and improving the left eye to a vision of 20/30.

Operation.—On September 18 a Lagrange operation was performed on the right eye, and as this was the more advanced as to the glaucoma, only a small portion of the beveled edge of the sclera was removed. A moderate-sized iridectomy was performed and the large, well-shaped conjunctival flap was easily replaced. I was surprised at the ease with which the conjunctival flap could be pulled down over the cornea, out of the way, allowing an iridectomy to be performed as easily as after a keratome incision. A week later the same operation was performed on the left eye, and a large-sized piece of sclera removed. In this eye I also obtained a very good iridectomy and reposition of the conjunctival flap.

Postoperative History.—The healing was uneventful and unaccompanied by any entanglement of the iris in the wound. The edematous condition of the conjunctival flap was, of course, very marked, especially in the left eye. This condition of localized edema, which could be increased on manipulation of the eye, persisted for several months, and was present when the patient was seen Jan. 20, 1908, at which time the left eye showed a vision of 20/20, with a —2 cyl., axis 90°. The right eye could count fingers at two feet, in the temporal field, and in both eyes the tension was normal or even subnormal. The patient had returned to his work at the watchmaker's bench. I saw him again March 1, 1910, more than two years after my last record, and found the following conditions: The right eye, which looked perfectly white and quiet, still retained the same amount of vision, and had a normal tension. The line of incision showed very plainly as a bluish mark from 0.5 to 1 mm. in width, extending a little less than the length of the original incision. Just to the left of the center of this bluish line, there was a round bluish opening with a refracting center, as though a bubble of air were caught just under the conjunctiva. It had a diameter of 1 mm. and I felt that this represented a distinct fistulous opening into the anterior chamber. There was no surface elevation of tissue over this spot, but the conjunctival tissue represented by the original flap was slightly and evenly edematous, with a slight increase of this condition following pressure on the lower part of the eye. Continued pressure, however, did not create anything like a bleb or visibly decrease the fluid in the anterior chamber. The left eye showed, with his glass, a vision of 20/15. The eye was perfectly white and quiet with normal tension and no sign of conjunctival edema, and the incision showing as a bluish line, rather wider than that in the right eye, but having no appearance of fistulization.

In this case it is evident that the glaucomatous condition has been entirely relieved, though it is questionable if there is any filtration, at present, through the cicatrix of the left eye. It seems justifiable to suppose, however, that the marked filtration which was present for more than three months after operation allowed a more permanent cure from the iridectomy. The right eye, however, shows, after over two years, most of the evidences required to prove the presence of an iris-free filtering or fistulous cicatrix. My previous experiences with miotics and simple iridectomies for such advanced cases as represented by this right eye would lead me to expect a steady decline in vision instead of the complete maintenance of a vision which this patient insists is of great help to him.

CASE 2.—*History.*—The patient, Mrs. G. H., gave a negative family history. For several years the sight in her right eye had been gradually failing up to Dec. 15, 1907, when she was stricken with a very severe attack of capillary bronchitis, and on the following day developed an acute attack of glaucoma in this right eye.

Examination.—When I saw the patient, December 16, I found the right eye in condition of acute glaucoma, with entire loss of vision, steamy cornea, with greenish pupillary reflex; tension + 3, and eye very much inflamed with conjunctival chemosis and extreme pain. She was coughing incessantly, and in view of her condition it was considered inadvisable to operate. Physostigmin (eserin) was accordingly prescribed to be used every three hours, and under this the pain ceased, the pupil contracted to nearly normal size, the cornea became less steamy, and the patient could discern movement of the fingers at two or three feet.

Operation.—No further improvement in vision took place, however, and the patient's condition improving, a Lagrange operation was performed on both eyes Jan. 2, 1908. The performance of the operation was very difficult on the right eye owing to the shallowness of the anterior chamber and excessive hemorrhage. The operation on the left eye was performd with no difficulty, and semed advisable on account of the finding of slight cupping of the disc and shallowness of the anterior chamber, with a slightly larger pupil than one would expect in a woman of her age. There was, however, no increase of tension, but the eye was evidently in a condition to develop glaucoma easily. The healing was uneventful in both eyes, with appearance similar to those described in the first case. The right eye, however, at the end of three weeks developed some increased tension and pain, and there were no signs of escape of aqueous into the subconjunctival space. A second Lagrange operation was then performed to the temporal side of the original one.

Postoperative Condition.—This resulted in reduction of tension, which has remained up to the present time, though the eye has only perception of light, practically no increase of vision having been obtained from either operation. This patient was seen again March 1, 1910, over two years after the performance of the operations. The left eye showed perfectly quiet and white with no conjunctival edema, and good clean coloboma without entanglement of the iris in the wound, and the line of incision showing as a bluish-gray area, about 0.5 mm. wide, extending nearly the full length of the original incision. There was no sign, however, of fistulization, to the naked eye. The vision with a + 3.50 sph. combined with a + 1.12 cyl., axis 175°, is 20/20. The right eye showed a regular, continuous, bluish line along the site of both incisions,

varying from a millimeter in width down to nothing. At the point where the two incisions came together, and also at the nasal end of the first incision, there was some entanglement of iris. There was no sign of conjunctival edema, but there was a small, bluish cystoid scar at the nasal side containing some iris tissue without other signs of a fistula. The tension was normal, and there was absolutely no pain or discomfort.

The other Lagrange operations which I have performed are so recent that I will not detail them, but simply state that all four, up to the present, show the conjunctival bleb indicative of aqueous escape into the subconjunctival spaces. They were all performed in cases of simple glaucoma in which no history or signs of previous acute or subacute attacks had ever been present, and in which the vision and fields were much reduced, and the discs cupped and atrophic; the results so far have been most encouraging as to improvement in a vision which had been steadily failing under the careful use of miotics. I should state here that in neither of my two reported cases, which now are over two years old, has any miotic been used since the Lagrange operation, nor has any been used since operation in the newer cases, so that all the improvement and maintenance of vision must be ascribed to the operation.

From my reading coupled with my personal observation, I feel reasonably sure that the Lagrange operation, or one of its modifications, has come to stay because it is a distinct advance in our operative treatment of chronic glaucoma, in that it makes the effect of an iridectomy more marked at first, and more permanent later, thus keeping the vision existing at the time of operation much longer than can be hoped for from miotics, simple iridectomy, sclerotomy or cyclodialysis.

101 Newbury Street.

ABSTRACT OF DISCUSSION

DR. JOHN E. WEEKS, New York: From the reading of the first paper of La Grange, the proceeding that he described impressed me favorably and at the first opportunity I began performing the operation. I have operated after this method in glaucoma, I think, 37 times. The operation is an iridectomy made in the manner which is at the present time classical and, in addition, the excision of a small piece of sclera. The incision is made by means of a Graefe cataract knife, making a large conjunctival flap. The operation itself is not a difficult one, in my opinion. The incision can be made so obliquely that, by grasping the conjunctival flap and pulling it forward, the piece of sclera to be excised can be exposed and rapidly excised by means of the curved scissors. I have watched very carefully the results of this procedure, and I have been very favorably impressed by it. Only a short time since a patient came to my office on whom I had operated some three years ago, and I found in that case that there was an actual filtration cicatrix in each eye. I had operated on both eyes. I found that the conjunctiva over the site of the iridectomy was somewhat raised, edematous, and by pressing on the eye the edematous condition could be increased slightly. Such is not the case in all the patients on whom I have operated, by any means, but the various cicatrices as represented by La Grange have been observed in the cases in which I have operated. First, in some of them the surface was perfectly smooth and the incision was filled by a cicatrix which showed no irregularities; second, in others there was some irregularity in the cicatrix, but not any evidence of filtration; third, there were still others in which the evidence of filtration was perfectly clear and pronounced. I know that the observations of Henderson and his histologic experiments seem to negative the claims of La Grange. Henderson concludes that the scar fills so that it entirely blocks the incision, and that no filtration results. This is true, I think, in many of the cases, but not in all. We have, then, in this operation, an iridectomy which is usually as efficient as an iridectomy made in any other way, and in addition the formation of a cicatrix, which may be a filtrating cicatrix in some of the cases at least. Moreover, if the tension does recur it is very much later in the cases in which a simple iridectomy has been performed. While at one time my impression was that I should revert to the ordinary iridectomy, at present I am of the opinion that I shall continue to use the operation of La Grange.

DR. H. GIFFORD, Omaha: I do not think that we need waste any time in discussing the possibility of making a filtrating cicatrix; that is to say, a cicatrix or opening that will stay open, between the anterior chamber and the subconjunctival tissue. I think all of you have seen, as I have, these blebs remain after an iridectomy performed in the various ways, or after cataract operations, and if you will begin massage after iridectomy and keep it up you will keep up such a bleb. But the question whether that will lower the tension of the eyeball permanently is a different one. In many cases in which I have seen this bleb left the tension has gone up, just as it has in other cases. In one case I had a beautiful bleb which stood up in bold relief in both eyes, but the poor man's tension kept up and the sight went down until he finally killed himself. So that it remains to be seen, and it will take a good deal of time for us to tell, whether anything is gained by this cutting out the sclera. Theoretically one would expect to find the shreds of connective tissue going across this opening and filling it up; but even if it does not the question of its effect on the tension is still, I say, an open one.

DR. ALLEN GREENWOOD, Boston: Holth in his article says that no case is successful unless the tension has remained normal for two years and unless at the end of two years there remains evidences of a filtering scar. This result Holth has undoubtedly obtained, according to his written description of the cases in which he has operated, and I feel confident that, in the few cases I have seen, the tension has remained down better than after the ordinary iridectomy, particularly in the cases in which the tension before the operation was considerable; and it is in those cases, as La Grange has pointed out, that you get the best results. I do not mean in cases in which there has been any inflammatory disturbance of the eye. Most of my patients have had no inflammatory signs of glaucoma; simply a cupping of the disc, with slight increased tension or occasionally plus one or over. In regard to doing the operation, it is simply an addition to the ordinary iridectomy made with the flap incision, and the cutting off of the small bevel of the sclera adds practically little to the operation itself, and I think it is an operation that for certain cases has come to stay. I think that all of you will be doing it later.

I have thus in my paper presented as briefly as possible the different operations recently devised for making the effects of glaucoma operations more permanent by efforts to establish a filtering cicatrix, or what might be better termed a subconjunctival fistulization of the sclerocorneal scar. Since writing my paper I have done additional La Grange operations, so that in all fifteen eyes have been operated on with only the happiest results. The later operations show even more clearly earlier evidences of fistulization than did those done at first. In cases in which the iris follows the aqueous out of the incision the iridectomy is done first, and then the sclerotomy follows.

Eucalyptus Oil in Treatment of Hookworm Disease.—P. Wijn writes from Ngawi in Java that the number of patients with ankylostomiasis is constantly increasing in the island. During 1907 such patients formed 4 per cent. of all applying to the Policlinic, and the proportion is becoming larger yearly. But he has found a method of treatment which seems to act much quicker and more reliably than the male fern or thymol. He prescribes:

R.	gm.	
Olei eucalypti	2 | 5	gr. xl
Chloroformi	3 | 5	gr. liv
Olei ricini	40 |	ʒiss

This is taken three times a week in two doses, with a two-hour interval, in the morning, fasting, with a dose of castor oil the day before. The patients are allowed to go home each day after their medicine has operated. A single course of the kind proved effectual in nearly every instance, and never more than two were required. His communication is published in *Janus*, March, 1910, xv, 178.

ANOMALOUS SCARLET FEVER

A REPORT OF THREE EPIDEMICS*

WILLIAM THOMAS CORLETT, M.D., L.R.C.P. LOND.
Professor of Dermatology and Syphilology, Western Reserve University

AND

HAROLD NEWTON COLE, PH.B., M.D.
Resident Physician, Lakeside Hospital

CLEVELAND

During the past decade there have occurred in Lakeside Hospital three epidemics of what is thought to be anomalous scarlet fever. In each of these epidemics the disease might have passed unrecognized or at least some doubt might have been entertained as to its nature, had not one or more typical cases occurred which acted as a diagnostic control. These epidemics were characterized by the mildness of the attack, the benign course of the disease together with the suppression or complete absence of the exanthem together with some other of the more important symptoms.

The first epidemic occurred in the winter of 1904-5 and started in the children's ward, but before strict quarantine and disinfection terminated its spread, the medical and surgical wards likewise contributed until eighteen cases were observed.

REPORTS OF CASES

CASE 1.—A child admitted with some slight ailment was observed to have a faint rash on the neck and face which soon disappeared, although a redness of the fauces persisted somewhat longer. There had been but a slight rise in temperature and the case attracted no special attention.

CASE 2.—A child aged 3 was admitted to the surgical service with tuberculosis of the knee. On November 30 the knee was aspirated and iodoform emulsion was injected. December 1 the temperature, which had been about normal, registered 103 F.; it became normal again on the 2d, and the following day again arose to 103. On the 4th a slight reddish, papular rash noticed over the trunk with flushing of the face. This was thought to be due to iodoform poisoning. Further examination, however, brought to light changes in the fauces; and the tonsils were red and slightly swollen. Three days later, December 7, the night nurse on duty in this ward came down with a typical infection of scarlet fever of moderate severity, whereon both were immediately isolated. The child ran a mild course with slight desquamation and was discharged Jan. 13, 1905.

CASE 3.—The case of the nurse above mentioned ran a typical course of moderate severity. It is noted that differential blood-count showed a marked increase in eosinophils.

CASE 4.—A child, aged 11 months, was in the surgical service for a hare-lip operation. Some time after the operation it was noticed that the temperature, which had been normal, suddenly arose to 103 but returned again to the normal two days later. Three days after this, December 4, it registered 101 and the next day the face was flushed, except around the mouth, and a slight rash could be made out over the body. There was also inflammation of the throat. The child was isolated, and three days later the rash had disappeared. The temperature at this time was 99. Desquamation had already begun around the neck. From this time the temperature became irregular and later a discharge was noticed from the left ear. The notes of the case show that the child was discharged well, Jan. 11, 1905.

CASE 5.—A hospital nurse, aged 19, complained of a headache, was chilly with a sore throat on December 4. On the afternoon of the same day the left tonsil was red and puffy with pin-point white spots. The temperature was 101.6. The next morning she still had headache and vomited once after taking magnesium sulphate. The tonsil being still "puffy and sore" the patient was taken to the operating-room to have it incised when one of us was asked to see the case. A diagnosis of scarlet fever was made and the patient isolated. Previous to this no rash had been seen although a slight itchiness of the skin had been complained of. At the time of our examination, however, a pinkish velvety rash could be made out on the sides of the neck and upper part of the chest. The face was deeply flushed, except about the mouth. The following day the rash was well out and of typical appearance. It then became patchy and began to fade two days later. Both tonsils became covered with a grayish exudate and general glandular enlargement was present. Throat cultures showed the staphylococcus and streptococcus. Blood count on December 4 showed eosinophilia 8 per cent.; no other change noted. The case thenceforth ran an uneventful course.

CASE 6.—A hospital nurse, aged 29, on December 8, complained of chills, sore throat, headache and vomiting. These, however, were not very severe and she continued on duty. Her appetite seemed unimpaired. Two days later the face, shoulders and outer aspect of arms were found to be flushed. The tonsils were slightly enlarged and injected and the tongue coated. The following day the erythema had assumed a blotchy appearance and was limited to the regions first involved. It did not extend and was followed by a slight branny desquamation on the arms and face. During the whole course the temperature did not go above 99.

CASE 7.—A child, aged 4, was admitted to the hospital December 6 suffering from acute bronchitis; while in the ward the temperature ran from 99 to 100. On December 21 the child had a slight erythema on the trunk, legs and face and the tonsils were red and swollen. The next morning the rash was faint, the tongue was coated and the tonsils were very large. By the 25th the rash had disappeared; although the patient was under close observation no appreciable desquamation followed. The urine showed a faint trace of albumin from December 12 to December 24. The temperature was never above 100.

CASE 8.—The patient, a child aged 3, on surgical service was operated on for club-foot on December 6, and on the 7th the temperature arose to 100.5 and remained between that point and normal until December 14. On that day, although the patient had not formerly complained, the temperature arose to 102.5 and there was a slight reddish punctate eruption over the body with the face flushed, excepting the circumoral region. The tongue later presented a strawberry appearance and the tonsils were large and red. There was a general glandular enlargement. On the 20th desquamation began and the child was discharged well one month later.

CASE 9.—A nurse, on duty in the infected ward, had scarlatina accompanied by arthritis, which was not severe. Her case ran a typical course. The patient made an uneventful recovery.

CASE 10.—A laborer, aged 30, was admitted to the surgical service for a herniotomy. On December 20, four days after admission, there was a slight rash on the body with an injected throat and large, red tonsils. The tongue was swollen and coated, glands enlarged. On January 1, desquamation started and patient was discharged January 16. At no time was the temperature above normal excepting on December 29, when the wound became infected and the temperature remained above normal for a few days. The leucocyte count was 23,000, eosinphiles 11 per cent., blood-cultures negative.

CASE 11.—A miner, aged 28, had been admitted to the hospital on September 4 for paraffin injection of the nose. On December 22 the patient had swollen tonsils, a suggestive tongue and a very slight, pinkish, macular rash on the body, the macules being from ⅛ to ½ an inch in diameter with a slight erythema between them and looking somewhat like measles. There was no enanthem on the buccal mucosa, no nausea, sore throat or fever; but the patient had some headache and general glandular enlargement. On December 21 there was a slight desquamation on the right hip which lasted only a few days; no desquamation was noticed elsewhere. The urine showed a faint trace of albumin from December 23 to January 10; the temperature was never above 99.

* Read in the Section on Dermatology of the American Medical Association, at the Sixty-first Annual Session, held at St. Louis, June, 1910.

CASE 12.—The patient, a nurse aged 20, on December 14 had some headache, sore throat and felt feverish, vomiting four times. On examination there was a slight erythema of the arms, over the region of the scapulæ and on the face, except the circumoral region. The patient also had a coated tongue and swollen, red tonsils covered with a slight exudate. The glands were not enlarged. By the 20th the rash on face and arms had faded, having appeared nowhere else, and on December 28, there was a very slight desquamation present on the areas involved. The nurse was discharged January 9, having never had a temperature above 100 and that only during the first night. The urine showed a faint trace of albumin up to January 6.

CASE 13.—A nurse, aged 23, on December 15 had headache, sore throat, and felt chilly and feverish. The next day there was a slight rash on the chest and neck with a temperature of 100.5. The tongue was swollen and coated, and the tonsils red and enlarged. The glands about the neck showed enlargement. By the 20th the rash had disappeared but no desquamation followed. On the 24th the throat again became sore and the glands enlarged and tender with a rash over the whole body. Then typical desquamation appeared, and the patient was discharged January 10. Except during the first night the temperature was never above 100. The urine showed a faint trace of albumin for a few days.

CASE 14.—A maid employed in the hospital, aged 25, on December 22 had a sore throat, headache, backache and was nauseated. She continued to work until two days later, when on examination she showed a flushed face, except the circumoral region, with erythema over the chest and shoulders. The tongue was large and coated, papillæ prominent, tonsils red and swollen and glands generally enlarged. The erythema was entirely gone by December 27, but the patient never had the slightest trace of desquamation. The urine showed a faint trace of albumin from December 25 to the 29. There were no casts. The leucocyte count was 13,600, eosinophiles 13 per cent., throat cultures gave staphylococci and streptococci. The temperature was never above 99 nor was the pulse over 100.

The remaining cases in this epidemic showed nothing unusual except that they were very mild and comparatively of short duration. The points mainly to be noted in this epidemic are the following:

1. The relatively large numbers of adults, chiefly nurses in the infected wards. Of eighteen attacked, eight were adults, six were nurses or otherwise employed in the wards, and two were adult patients exposed while in the wards.

2. The benign character of the infection and its short course, (average being 3.9 weeks from appearances of rash to end of desquamation). The only constant symptoms that could be regarded as at all typical were the onset and the congestion of the fauces. The cutaneous manifestations, with two exceptions, are evanescent and alone insufficient for the purpose of diagnosis.

The second epidemic began in April, 1907; there were eleven cases reported, although the case notes were found even less complete than in the first epidemic. As nearly as can be ascertained the epidemic began in the children's ward as an indefinite sore throat with no distinct or constant cutaneous manifestations.

Convalescence, however, was more protracted than was observed in the first epidemic and even a larger proportion of adults were attacked. The following may be taken as the most typical examples of this epidemic.

CASE 15.—A nurse, aged 20, was admitted to the isolation pavilion April 19, 1907, after having had a slight sore throat, headache and malaise since April 16. On examination there was a faint rash over the entire body, general glandular enlargement, tongue negative, tonsils injected and the right one enlarged. There was nothing abnormal in the heart or lungs. The rash disappeared by April 22 and desquamation, which was never very profuse, did not start until May 1 and lasting until July. The temperature was never above 99.5, excepting at one time, when it went up to 100.3. The pulse was never more than 110; urine was negative. The patient was discharged July 1, 1907.

CASE 16.—A nurse, aged 21, on July 13 complained of sore throat, weakness, nausea, cold perspiration and fever. The next day she noticed an eruption and on examination there was found a marked erythema with edema of the face. There was a strawberry tongue, throat swollen, tonsils covered with a membrane, glands all palpable. The cutaneous rash and the membrane in the throat were gone by May 18 and desquamation started lasting until July. The temperature on admittance was 104 and pulse 120, both of which came down to normal in four days. No complications were noted, excepting a slight trace of albumin in the urine. Cultures of the streptococcus were obtained from the throat.

CASE 17.—A nurse, aged 20, with previous history of rheumatism and chorea, had been on duty in the infected ward. On May 9 she complained of weakness, sore throat and malaise. On the 10th a rash was noted on the chest, arms and neck and on examination there was a faint erythema over the entire body, with a strawberry tongue, swollen tonsils covered with a heavy membrane and general glandular enlargement. The throat swab showed only streptococcus. The rash was gone by the 13th and desquamation began about a week later, being finished by July. The patient developed a slight arthritis and myocarditis. The temperature remained about 101 until the 15th. The urine showed a faint trace of albumin.

CASE 18.—A nurse, aged 19, awoke on May 9 with a slight sore throat, nausea, malaise and slight fever. The next day a rash was noticed and on examination the patient had a very slight erythema over the entire body with a negative tongue and injected throat and tonsils. The superficial glands were slightly enlarged. Desquamation began on the 25th, lasting until July, although never very extensive. The urine showed a faint trace of albumin; there were never any casts. The temperature was 100 on the first day, after that normal.

CASE 19.—A nurse, aged 20, on May 4 complained of severe sore throat, nausea and malaise. Early in the afternoon an eruption first appeared on chest and neck. The following day a general marked erythema was present with glandular enlargement, tongue large, swollen, reddened, and throat greatly congested. The rash had disappeared on the 19th, and the throat was normal by the 21st. Desquamation began June 1 and lasted until July 17, although never very profuse. The temperature on admission was 102, but soon fell to normal where it remained. The urine showed a faint trace of albumin.

In this epidemic, as in the one preceding, there developed no serious complications or fatal results. The features to be noted are the sudden onset with marked involvement of the fauces and comparatively high temperature followed by a varying degree of the exanthem. There was a rapid subsidence of all symptoms followed by a retarded but protracted period of desquamation.

What may be termed the third epidemic occurred in 1909. Although but three cases were observed they furnished features that are thought worthy of mention.

CASE 20.—A child, aged 9 months, was on the surgical service for cervical adenitis, being admitted Oct. 31, 1909. It had some discharging sinuses which were being packed with iodoform gauze, and on March 21 the child developed a slight scarlatiniform rash with a temperature of 100. The rash was faint, atypical, lasting only three days. There was no nausea or vomiting. The throat was congested and reddened, while the tonsils were enlarged. At first the case was regarded as an iodoform rash, but as the patient had 7 per cent. of eosinophiles in a differential count of 200 cells she was isolated, and while in isolation had a typical desquamation and double otitis. The urine also had a faint trace of albumin.

The temperature never went above 100 until the otitis developed.

CASE 21.—The child in the next bed to the patient last described came down three days later with a typical scarlet fever. She was a girl aged 3, in the hospital for acute anterior poliomyelitis. The rash was marked and typical, with a temperature of 103, rapid pulse, vomiting, severe sore throat and a considerable enlargement of the tonsils. Two days later the rash faded and the case ran a typical course of desquamation with eventually a complete recovery.

CASE 22.—A nurse, aged 24, was nursing the child with obscure so-called iodoform rash. Two days later she was taken off duty because of a sore throat and a feeling of malaise and headache. The throat was very red and edematous, the tonsils greatly swollen so that they met in the median line. They were partially covered with a membrane but showing no diphtheria bacilli. The glands were not enlarged, except those of the neck. The temperature was 100 on admittance, 103 two days later and afterwards never above 100. On December 1 the patient vomited several times but the tongue was never typical. The leucocyte count was 19,000; differential showed no eosinophilia; urine was negative. The patient never showed any rash or desquamation, but considering her symptoms it was deemed justifiable to place her in this list.

CHARACTERISTIC FEATURES

The most striking characteristics in this series of 32 cases occurring in three epidemics were the following:

1. *Erythema.*—There were three cases in which erythema was very slight; in one it was absent and in one it was confined to small areas and very evanescent. Two of the patients with slight erythema had it confined to the neck, shoulders and arms. It may be well to mention, in passing, that one patient had a secondary erythema.

2. *Temperature.*—This varied from normal to 105 F. Four patients never had a temperature above 99, two never above 100, and the remainder ran between 100 and 105, most of them, however, between 100 and 102.

3. *Desquamation.*—There were six cases in which the desquamation was typical and one in which it was faint but general. One patient never showed any desquamation except around the neck; another none except on the right hip. There were two in whom it was confined to the face, arms and shoulders and three never showed any desquamation.

4. *Urine.*—In only two cases was there absence of all signs of nephritis, while all the others had a faint trace of albumin; and in one case, there were casts. Two of the three patients showing no desquamation had a faint trace of albumin for a few days.

5. *Angina.*—Practically every patient in this series had a severe angina, seven of them also showing presence, more or less, of a membrane in the throat.

6. *Blood.*—The only changes noted were a marked increase in the number of leucocytes in a few cases, and in a number of instances the differential blood count showed a high percentage of eosinophiles, which is in accord with the observations of Van den Berg[1] and Kotschetkoff.[2]

LITERATURE OF THE SUBJECT

In the literature dealing with this special phase of scarlet fever, namely, the absence of exanthem with little or no rise of temperature together with other manifestations characteristic of a faint type of the disease, we find as far back as 1839, Taupin[3] observed, during the course of his internship at the Hôpital des Enfants Malades, an epidemic of five cases of scarlet fever in two of which there was no eruption. The year previously Eiselt[4] published an account of a severe case of scarlet fever in a girl of 20, in which there was no eruption, although the girl had a marked desquamation associated with anasarca. She eventually recovered.

Buttura[5] in 1857, was called on July 10, 1856, to see a young man who suffered from a well-marked scarlatinous angina. The eruption was copious and the disease followed a course typical of scarlet fever. Four days later a little girl in the same family developed croup; angina marked but no eruption throughout the course of the disease. Five days later on June 20 a little brother also developed intense characteristic anginous symptoms; the odor from the mouth was pronounced. No eruption could be observed at any time. Convalescence was prompt in all three. There were no sequelæ.

Buttura then enters into a discussion concerning the opinions of authors in regard to the possibility of scarlatina without eruption, and reviewed the literature of this subject at some length. He states that in September, 1829, there reigned in the village of Seine-et-Oise an epidemic of so-called common angina. Careful study by the local physician led to a diagnosis of scarlet fever with predominant mouth (throat) symptoms. In the Château de Villeroy, inhabited by Comte Friant and his family, thirteen persons were affected, and of these, five presented a special angina without eruption.

Trousseau observed scarlatinous angina without eruption of the skin in 1828, at Cour-Cheverny. The diagnosis was made on the strength that a boy had distinct scarlet fever with eruption. Three sisters of the boy developed fever, angina, but no eruption.

He states that Dr. Carrière observed during an epidemic at Saint-Dié (Vosges) during the winter of 1842-1843, 34 cases of scarlet fever with an eruption in 23 only, and in the majority of these it was very slight. The disease ran a benign course. In one case of scarlatinous edema with albumin in the urine; no sign of eruption appeared, although all the other symptoms of scarlet fever with angina were present.

Bouché (of Vitray) reported four cases of scarlet fever as follows: The first was typical scarlet fever without eruption; the next a typical case with eruption; the third was again without an eruption and the fourth again a usual case. Two of the cases were without eruption. The diagnosis was made from general symptoms and the presence of eruption in the other two cases occurring in the same house.

Legroux reported a case of scarlet fever in a chlorotic woman in whom the eruption could barely be made out. The eruption was likewise scarcely perceptible in an infant of four days who is supposed to have contracted it from the mother, who had scarlet fever on the second day of puerperium. The father had an angina without fever or redness of the skin at the time that the scarlet fever terminated in the mother.

In another house a boy had ordinary scarlatina; the sister developed a marked angina, with pronounced scarlet eruption and died. During the course of this affection the mother, her infant, and a young woman of

1. Van den Berg, J. B.: Arch. f. Kinderh., 1898, xxv, 321.
2. Cabot, R. C.: Clinical Examination of the Blood, New York, 1897, p. 177.
3. Taupin, Charles: Essai sur la scarlatine sans exanthème, Thèse, Paris, 1839; abstr. in Jour. conn. méd.-chir., vii, 151-155.
4. Eiselt, J. N.: Fall einer Febris scarlatinosa sine Exanthemate, Med. Jahrb. d. k. k. oesterr. Staates, Wien, 1838, New Series, xv, 212.
5. Buttura, C. A.: Des fièvres éruptives sans éruption et particulièrement de la scarlatine sans exanthème, 1857, Paris.

24 contracted angina with pseudomembranous plaques, with fever, but without eruption, lasting six days. Three days after the death of the child, the grandmother and the father presented guttural angina, slight fever, characterized by a bright redness, but no swelling.

During an epidemic in Berlin, Dr. Helft observed cases in which no eruption appeared although all the other symptoms prevailed, occurring in families in which scarlet fever was present.

In an epidemic of scarlet fever at Loudon (Vienne) from March to September, 1841, Mondière reported that in one case of very severe angina the eruption was confined to the feet and hands only. In other cases no eruption appeared.

During the epidemic at Loches, 1835, Renaud observed three cases of scarlet fever in one family. Two children developed typical cases of the disease when the third one was stricken with all the severe symptoms that the others had shown, but at no time during the attack did it develop the slightest sign of an eruption. The course of the disease was quite severe in this case, but the child recovered.

Berrand further states that Krauss of Tübingen reports having observed scarlet fever without eruption in the proportions of 1 in 3. The cerebral symptoms predominated in these cases. He states that Dr. Maclintock reported three cases as follows: Child was taken with vomiting; condition did not improve; coma alternating with spasms, death ensued. On the day this child was buried another in the family was taken in the same manner; developed the same symptoms; marked convulsions and death. The third child was also taken. It, however, developed a typical scarlatina rash. No doubt the other two children died from scarlatina without exanthemata.

About the time Buttura's article appeared Bauer[6] reported an epidemic of 20 cases, among them being that of a boy who had, he thought, a very severe scarlatina, yet developed no observable eruption at any time. The patient eventually recovered after having had a post-scarlatinal arthritis.

Anderson,[7] Banks,[8] Whelan,[9] Robinson,[10] Dreyfus,[11] and Brissoe and Wetherill,[12] also reported similar cases about this time, all agreeing that in their experience scarlatina at times existed with absence or sparseness of the eruption as well as other symptoms of scarlatina. At such times it is impossible to make a diagnosis were it not for the fact that an epidemic of scarlet fever is in progress.

Furthermore Gosebler[13] in 1881 made a diagnosis of scarlatina in two children aged 30 months and 6 years respectively, despite the fact that they had no eruption, desquamation or throat symptoms. He based his diagnosis on the following grounds: that the children were ill for some time, the illness in each case being with fever and repeated vomiting, followed later by large amounts of albumin in the urine; and that it was at a time when scarlet fever was very prevalent in the town and quite fatal. Furthermore several cases of scarlatina without exanthemata had been observed. In 1892 Baiss[14] reported three cases in one family with the following history: The first child was found to have a temperature of 102; the next day the temperature was normal, but the child had a slight sore throat and some enlargement of the glands of the neck; otherwise it seemed to be well. There was desquamation later, however, and a few days after the beginning of the child's illness a second child was seized with more severe symptoms, and with an eruption which resembled measles. At this time the third child became ill with a typical scarlatinal eruption accompanied by jaundice. Were it not for the last case it would have been difficult to diagnose correctly those preceding.

Lee[15] reports sixteen cases, occurring in four families in which four adults and twelve children inhabited the same building. The series is noteworthy because of the absence of the exanthem as well as some other symptoms. In the first two only was any rash observed. The first patient when seen had a fast pulse, temperature 101, strawberry tongue, characteristic rash and sore throat. In five patients the glands were neither swollen nor tender. Only three had sore throat and only two vomited. The temperature in all ranged from 101 to 102; the pulse in the children, from 140 to 148, and in adults from 130 to 134. The following sequelæ were noticed: One patient developed diarrhea, two bronchitis, and in two only was there desquamation. In two after some exposure there followed swelling of the submaxillary glands with rise of temperature and accelerated pulse. One woman, contracting the so-called scarlatina five days after labor, had puerperal fever.

Warry[16] reported an interesting epidemic of 150 cases of scarlatina with sore throat but with an absence of rash. The entire epidemic both in regard to those having rash and those without rash were found to be due to the milk supply. The author believed the cases without an exanthem to be scarlatina for the following reasons:

1. Many of the patients had desquamation during convalescence.
2. Others had kidney complications.
3. Several had arthritis.
4. Several developed otitis.

Further, it may be interesting to note that scarlatina without fever has also been recognized not infrequently and corresponds more or less with some of our cases.

D'Amore[17] reports several cases and Brunard in the past year states that he has observed a number of cases about Brussels. He mentions in particular three cases, in children, which occurred in one family. They ran an afebrile course and were mild, yet all three had typical scarlatina complications.

McClanahan[18] at Woodhull, Ill., also had the opportunity of studying afebrile scarlatina in a series of 150 cases. Many of his cases also were notable on account of the absence or mildness of the exanthem and other symptoms.

6. Bauer, F.: Beitrag zum anomalen Verlauf des Scharlachfiebers, Ztschr. f. med. Chir. u. Geburtsh., 1859, xiii, 97.
7. Anderson, W. J.: Some Anomalous Cases of Scarlatina, Lancet, London, 1854, i, 327.
8. Banks, J. T.: Dublin Hosp. Gaz., Anomalous Scarlatina, 1858, New Series, v, 65.
9. Whelan, J. H.: Modified and Anomalous Scarlatina, Lancet, London, 1883, ii, 769.
10. Robinson, C. H.: Scarlatina sine Eruptione, Lancet, London, 1870, i, 227.
11. Dreyfus, Brisac: De la scarlatine anormale, à propos de trois cas observés dans la même famille, Gaz. hebd. de mèd., 1884, Series 2, xxi, 606.
12. Wetherill, Horace G.: A Series of Unusual Cases of Scarlet Fever, Tr. Med. Soc., New Jersey, 1888, p. 225.
13. Gosebler, A.: Kurzer Bericht über drei Fälle von anomalen Verlaufe der Scarlatina, Prag. med. Wchnschr., 1881, vi, 385.
14. Baiss, J. R.: Some Anomalous Cases of Scarlet Fever, Boston Med. and Surg. Jour., 1892, cxxii, 630.
15. Lee, W. R.: Med. News, Philadelphia, 1892, p. 186, Scarlatina sine Exanthemata.
16. Warry, J. K.: Special Report on a Recent Outbreak of Scarlatina and Sore Throat Disease in Upper Clapton, Practitioner, London, 1892, xlix, 63.
17. D'Amore, L.: Scarlatina apiretica, contribuzione alla casuistica, Progresso med., Naples, 1895, ix, 25.
18. McClanahan, W. S.: Some Peculiarities in a Mild Epidemic of Scarlet Fever, Peoria Med. Jour., 1896, i, 339.

He says that in December, 1892, he was called to see a patient with a temperature of 101, pulse 100, restless and complaining of itching. She had red faucial and buccal membranes; the tonsils had a fibrinous deposit over them, no strawberry tongue. By the next day restlessness had disappeared but there was a typical scarlet fever eruption although the temperature and pulse were normal. In another twenty-four hours the throat was clear, the rash and all other evidences of scarlatina had disappeared and the patient had no further trouble.

From this time until 1893 he saw about 150 cases. The fauces were involved in every case, as was the presence of the strawberry tongue. In about one-third of the cases there was no eruption. In six of them it resembled that of rubeola and in three the surface was nearly scarlet, red, smooth and glossy but without the minute points seen in the scarlatina rash. In the remainder the exanthem was the ordinary scarlet fever rash except that its stages were of shorter duration.

Twenty of the cases were followed by otitis; this occurred irrespectively of the other symptoms. The temperature seldom rose above 102, and this fever rarely lasted longer than three days; in fact, in the majority, the temperature was normal by the third day. At times the disease appeared to be contagious, at other times not.

Rodger y Piza[19] had the opportunity of observing an interesting case. In a certain family there was a child who ran through a typical course of scarlatina. Rodger y Piza was suddenly called in to see a younger child who had had a high fever for twenty-four hours and was voiding dark urine. The latter on examination was found to contain blood, epithelial cells, casts and much albumin. The hematuria lasted for thirty days. On the twelfth to the fourteenth days there occurred a slight furfuraceous desquamation on the face and upper part of the chest and forearms. From the presence of scarlet fever in the house Rodger y Piza had not the slightest doubt that this was a case of scarlatina *fruste*, so called by Trousseau, only one symptom of scarlet fever being present.

THE VARIATIONS OF SCARLET FEVER

From the foregoing it seems evident that what is known as scarlet fever varies greatly in its clinical manifestations. In a violent form it may cause death within a few hours, or in its mildest form it may be evanescent and difficult to recognize. As to the *materies morbi* which gives rise to scarlet fever we know nothing positively, nor of its mode of invasion. From the epidemics herein reported as well as others cited it would appear that the toxin varies in different outbreaks. From our observation it does not appear that mild infections beget malignant strains, or the reverse. Furthermore it should be remembered that in epidemics of a severe type atypical cases occur as frequently as in those of mild type.

From the fact that the tonsils are involved at a very early stage, and from the constancy with which this symptom has been noted, it would seem that the infecting agent gains access through these glands, as claimed by Dawson[20] and Lemoine.[21]

It seems unwise, therefore, with our imperfect knowledge concerning the etiology of scarlet fever, to regard these aberrant forms, which point strongly to some aberration of the exciting cause, as distinct affections. In 1894 Duke[22] endeavored to establish a "fourth disease" in the infectious exanthemata, but the consensus of opinion does not substantiate this claim. Our observations show that the most constant symptoms are the angina and slight nephritis, while an increase of eosinophiles in the blood was observed in a considerable number of our cases. Other phenomena are usually present even in atypical forms of the disease, but they are inconstant and subject to wide variation.

1935 Euclid Avenue.

19. Rodger y Piza, Ramon: Un caso de escarlatina frustada, Rev. balear. de cien. med., Palma de Mallorca, 1903, xxiv, 27.
20. Dawson, W.: Med. Chron., Manchester, 1893-4, xix, 217.
21. Lemoine, G. H.: Bull. et mém. Soc. méd. d. Hôp. de Paris, 1895 and 1896; Gaz. Hôp. de Paris, Nov. 25, 1895, p. 1337.
22. Duke, Clement: Lancet, London, 1894, i, 791.

ABSTRACT OF DISCUSSION

DR. W. L. BAUM, Chicago: I think that all of us who have had much experience with scarlet fever realize the great difficulty attendant on a correct diagnosis in these atypical cases. In Cook County Hospital in Chicago a number of cases have caused much controversy among the health authorities, the attending physicians and physicians in general practice. In attempting to reach a diagnosis in these cases, we have paid particular attention to the blood examination rather than to the local manifestations of the disease, and in our blood tests we have not laid so much stress on the absence of eosinophilia as on the differential blood count. We have elaborated somewhat on the theory propounded by Tillotson; that is, we have paid especial attention to the increase in the polynuclear nutritives, and so positive have we become that on that point alone do we exclude or admit the cases. We have had cases so mild that they would otherwise have escaped recognition. On the other hand, we have had cases in which the skin and throat manifestations were so manifest and pronounced that one would be led to the positive diagnosis of scarlet fever, and yet, on account of the presence of some other factor, such as a wound infection, a contrary diagnosis was established on the basis of the blood count. About three years ago I remember seeing a child with a small scalp wound, and at the same time there suddenly developed a slight temperature and sore throat, together with an erythematous rash commencing over the shoulder and extending to the sternum and other parts of the body. There seemed to be no question that the case was one of scarlet fever. When I saw the child on the following day, I was induced to make a blood count on account of the presence of the wound on the head, and as a result of the findings, scarlet fever was excluded. In the meantime, the child had been quarantined in the scarlet fever ward, and six days later it developed true scarlet fever, which proved fatal. I am convinced that it is on the basis of these blood counts that the differential diagnosis in these doubtful cases of scarlet fever can be made more positively than by any other means known at the present time.

Moving Pictures of the Internal Organs.—The *Zeitschrift für Röntgenkunde* opens the year and its twelfth volume with an article by C. Kästle, H. Rieder and J. Rosenthal on the kinematographic reproduction of the physiologic movements of the stomach. They describe the apparatus for the purpose and give a series of the moving pictures and also a composite view of the stomach in normal conditions and in a case of cancer. They found that a fold forms in the stomach wall above the pylorus and protrudes inside, the fold of the stomach wall growing longer and longer, the tip curving around more and more toward the pyloric outlet. As the movements of this fold are traced in the moving pictures it is seen that the fold appears like a kind of shovel, and forces the contents of the stomach out through the pyloric outlet, after which the fold retrogresses, to form anew and go through the same procedure again. In a case in which cancer was suspected, the rudimentary protrusion and behavior of this fold confirmed the presumptive diagnosis of some serious disturbance in the physiologic movements of the stomach. The authors assert that this "bioroentgenography" is destined to prove valuable in the diagnosis of pathologic conditions.

SPONTANEOUS RUPTURE OF THE EYEBALL

A PHENOMENON OF GLAUCOMA *

E. C. ELLETT, M.D.

MEMPHIS, TENN.

AUTHOR'S CASE.—Mr. S. C., aged 68, resident of Kentucky on a visit to Memphis, had been given a letter of introduction to me by Dr. J. M. Ray of Louisville. On the night of Dec. 9, 1904, about 9 o'clock, I was called to see him on account of a sudden pain in his left eye, accompanied by bleeding. He had undressed and retired, and afterward felt a desire to go to stool. His bowels moved without straining, and he again retired. After lying down he began to bleed from the left eye, and immediately to experience a severe pain. I found him still suffering such pain as to require half a grain of morphin to relieve him. The eye showed a large clot protruding from a rupture in the cornea, the corneal wound being about 10 mm. long. Oozing of blood was still going on, and the eye was so painful that pressure could not be applied. The bleeding continued for an hour and a half, finally ceasing from the effect of ice-pads lightly applied, or the morphin, or else spontaneously. A light dressing was then applied, and on December 12 the eye was enucleated.

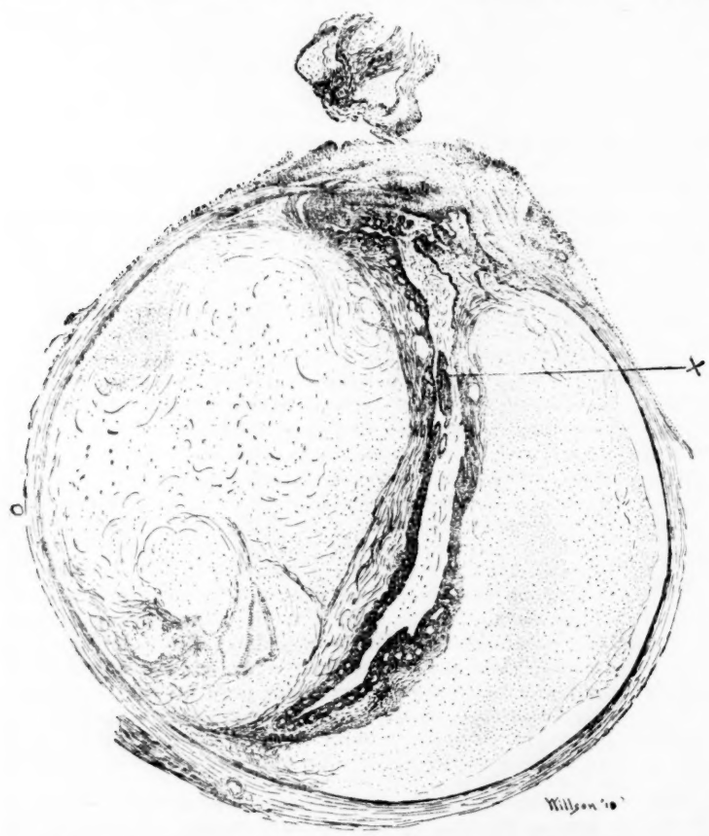

Fig. 1.—A section of the globe under low power. The swollen corneal tissue, infiltrated with round cells, is seen, with a mass attached to it consisting of blood and ocular membranes. The tear in the cornea can be located by tracing Descemet's membrane. The cleft in the center of the ball is formed by folds of the chorioid. At X is a portion of the retina. Between the chorioid and sclera is a large hemorrhage, which has detached both chorioid and ciliary body, folding the latter forward against the iris. The lens is not seen. The section passes well to one side of the disk.

The previous history of this patient is gathered from Dr. Ray's notes, of which he has kindly sent me extracts. Dr. Ray had seen the patient, aged then 65, first in 1901, for an iritis in the right eye. This subsided, with vision 20/30. The left eye, in December, 1901, showed floating opacities in the vitreous, opaque lens striæ and some plastic deposits on the anterior capsule, with synechia. The patient counted fingers at two feet. In 1904 Dr. Ray saw the patient again, with increased tension in the left eye, ciliary injection and hazy cornea. The condition was controlled by physostigmin (eserin), and operation was declined. A few weeks before I saw the patient Dr. Ray examined the eye again. The iris was almost completely adherent to the lens, and looked muddy; the cornea was normal, eye blind, and there was some ciliary injection and lacrimation, tension normal. There was extensive destruction of the framework of the nose, and an old specific history.

To return to what I can relate from personal observation, there was marked arteriosclerosis, urine and heart normal. No cause for the rupture was discovered. There was no history of any sort of injury or straining or effort, if we accept the patient's statement that he had not strained at stool. The eye had been a little red and painful for two or three days, and it is reasonably sure that this was due to or accompanied by an increase of tension, judging from the history as related, and the microscopic appearance of the nerve-head, as subsequently determined. The eye was enucleated under ether and without any accident. The socket healed in the usual time.

The right eye was found to be the seat of an incipient cataract, vision 20/80, with — .75 S. with — .50 Cyl. Ax. 140° = 20/40, add × 3 S. = J. iii. The retinal veins were tortuous and indented by the arteries; arteriosclerosis was present. The nose and pharynx both showed evidences of former specific ulceration, in the shape of extensive scars.

The patient died in the summer of 1909, and as far as could be ascertained the right eye remained good. The cause of death was not learned.

The eye was sent to Dr. Brown Pusey, to whom I am indebted for the report on the condition of the eye, as follows:

"Macroscopically a section in the antero-posterior diameter shows a hernia of the ocular contents through the center of the cornea. The retina and chorioid are detached except at the nerve-head, and these tissues make up the mass of the hernia. The space between the sclera and the detached chorioid and retina is occupied by blood (Fig. 1). The head of the nerve shows deep cupping.

"Microscopically the corneal tissue shows inflammatory changes of marked degree. The tissue is edematous and there is a great increase of cellular elements. There is no necrotic material such as one would find in an ordinary ulcer. The tissue of the limbus region shows the same changes; the new cells here are mononuclear cells. The arteries of the limbus region have markedly thickened walls, and in one set of sections marked inflammatory changes are seen in the outer wall of a large vein (periphlebitis). The prolapsed tissue is made up of vitreous, iris, chorioid, and retina, and all of them are edematous and full of blood. There is little to be made out of a study of the iris, chorioid, and retina, except the fact that the iris and chorioid are the seat of a great increase of cellular elements, and the vessels show marked thickening of the walls. (Figs. 2 and 3).

"The most striking changes found in the tissues are the changes in the cornea and the changes in the blood vessel walls. These changes probably explain the bursting of the eyeball and the hernia of its contents."[1]

The peculiar features of this case (I had never encountered a similar one, and Dr. Ray, a practitioner of much larger experience, apparently also had never seen a similar one) led to some search into the literature of the

* Read in the Section on Ophthalmology of the American Medical Association, at the Sixty-first Annual Session, held at St. Louis, June, 1910.

1. Dr. Pusey adds that in his opinion the cornea ruptured first, and the blood vessels later from the sudden lowering of intra-ocular pressure. The probable sequence of events will be discussed later, but it would be well to say now that in forming an opinion from examination of the sections one must take into consideration the fact that the eye was not removed for several days after rupture, so that the inflammatory changes in the cornea had time to occur after rupture and before the eye was removed. It cannot be argued from the sections that the cornea was pathologic at the time of rupture.

subject. In all, twenty-two cases have been collected, one reported in 1879 (Cheatham), one in 1881 (Vergely), and the others since 1899. The references quoted by Coppez of cases reported by Baster, Kyll, and Flemming, could not be found. The cases of McKenzie, if they are the ones referred to on page 449 of his book,[2] also quoted by Coppez, are cases of perforating corneal ulcer and not at all similar to the condition under consideration.

The following are the abstract reports of the twenty-two cases referred to:

VERGELY'S CASE.[3]—A woman, 78 years old, with failing vision for three years, and opacity of the right cornea, arose one night and made an effort to urinate, after three days of pain in the right eye. A severe pain was felt in the right eye, followed by a free flow of blood from it. This was found to proceed through a tear in the center of the cornea. The bleeding ceased spontaneously, and the ball atrophied. Vergely thinks that the eye was glaucomatous, and that an intraocular hemorrhage occurred, which raised the tension sufficiently to rupture the cornea. The left eye showed a cataract.

COPPEZ'S CASE.[4]—A man, aged 69, had double chronic glaucoma. The right eye had been iridectomized, and showed cupping and atrophy of the disk, with impaired vision and contracted field. The left eye, not operated on, was almost totally blind. The left eye subsequently ruptured during a violent fit of anger, the rupture being characterized by severe pain and free bleeding. The eye atrophied and was removed nine months later. The lens was absent, the chorioid and retina detached, but not expelled.

PROFESSOR COPPEZ'S CASE (quoted by H. Coppez).—A man, aged 65, had absolute glaucoma in the quiescent stage. Leaning to look under his bed, he was seized with a severe pain in the eye, followed by a free hemorrhage. A central rupture of the cornea was found, from which the ocular contents protruded. The eye atrophied. As this eye had not been seen immediately before the accident, it is not certain that the cornea was not ulcerated.

WIBO'S CASE.[5]—A woman, aged 65, with the left eye normal, had absolute glaucoma, with exacerbations in the right eye, controlled by pilocarpin. A whitish infiltration extended from the center of the cornea toward the periphery. During a slight effort the eyeball ruptured, and with a profuse hemorrhage the ball emptied itself of its contents and membranes. A horizontal tear occupied two-thirds of the corneal diameter, with ulcerated borders. Evisceration was performed.

VILLARD'S CASES.[6]—*Case 1.*—The patient, aged 65, had simple chronic glaucoma in the right eye. One month after the first examination an attack of acute glaucoma occurred, for which an iridectomy was performed. A year later the eye, which had been comfortable, but had become blind, again became painful and an ulceration of the cornea was observed. This ulcer became infected and the ball ruptured suddenly with hemorrhage and such severe pain as to cause the patient to lose consciousness. The ball atrophied, and about eighteen months later the patient died from softening of the brain.

Case 2.—The patient, aged 74, had absolute glaucoma of the left eye, with pain and hyphemia. Fourteen months later the conditions were about the same, with the addition of superficial ulceration of the cornea. The lower portion of the cornea was slightly bulged. Rupture of the cornea occurred, with subsequent atrophy.

Case 3.—The patient was a man aged 65, with traumatic corneal ulcer, hypopyon, chronic dacryocystitis and increased tension. During an effort at defecation the ball ruptured at the site of the ulcer, severe hemorrhage occurred and expulsion of the ocular contents. The ball atrophied.

VERHOEFF AND SPALDING'S CASE.[7]—A man, aged 64, had glaucoma, diagnosed as secondary. After two attacks of acute glaucoma, treated medically, he was free from pain for two years. He then had a third attack of glaucoma, at which time the cornea showed a complete yellowish infiltration. Enucleation was refused, and after five weeks the eye ruptured while the patient was quietly talking to his wife. The ball was enucleated. The ocular contents and membranes were found to be extruded. The edges of the corneal wound were infiltrated with polynuclear leucocytes. The globe contained a small round-celled sarcoma.

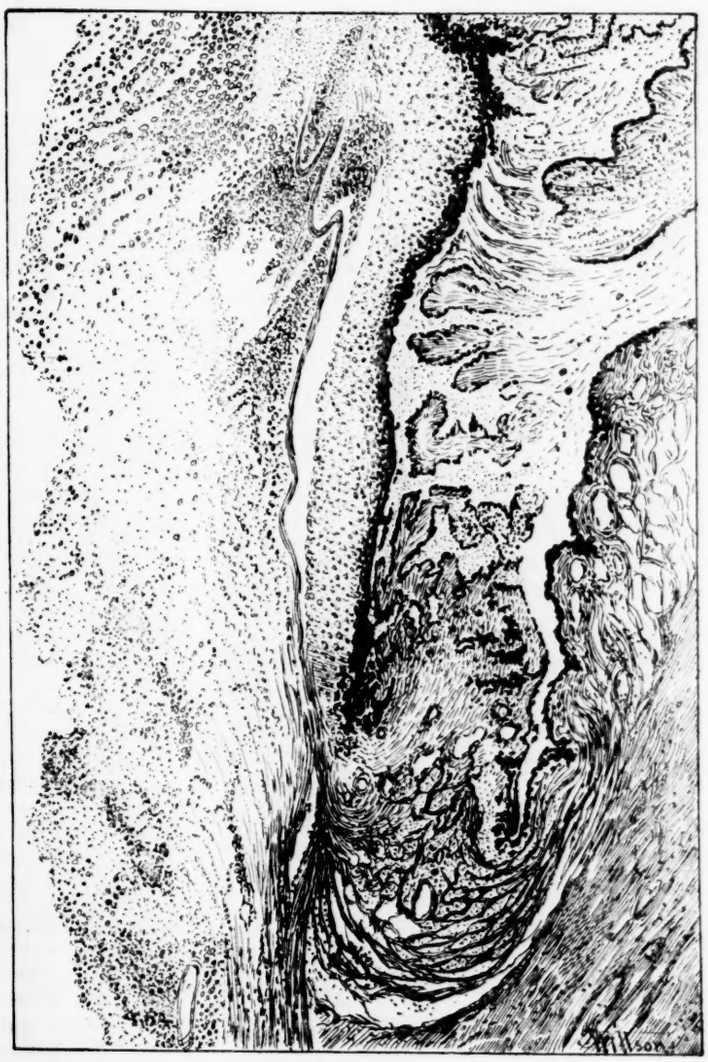

Fig. 2.—The iris, ciliary body, cornea and angle of the anterior chamber are shown under higher power. The thickening and infiltration of the cornea, the tear in the cornea and the detachment and folding forward of the ciliary body are shown.

MILLIKIN'S CASE.[8]—The patient was a woman, aged 68, blind from absolute glaucoma in both eyes. While she was quiet in her room one eye ruptured, producing a vertical tear of the cornea, extending into the sclera above. Profuse hemorrhage and subsequent atrophy occurred. There was no history of any corneal disease.

ZIMMERMAN'S CASE.[9]—A healthy woman, aged 56, had a corneal ulcer involving one-half the corneal thickness and

2. McKenzie: A Practical Treatise on Diseases of the Eye, Philadelphia, 1865.
3. Vergely, P.: Bull. Soc. d'anat. et physiol. de Bordeaux, 1881, ii, 214.
4. Coppez, H.: Sur les ruptures spontanées du globe oculaire dans le glaucome, Arch. d'Opht., October, 1908, xxviii, 609.
5. Wibo, M.: Presse méd. Belg., Bruxelles, 1909, lxi, 193.
6. Villard, H.: Arch. d'Opht., December, 1908, p. 768.
7. Verhoeff and Spalding: Arch. Ophthalmology, 1901, xxx, 389.
8. Millikin, B. L.: Tr. Am. Ophth. Soc., 1899, p. 488.
9. Zimmerman, M. W.: Ophth. Rev., 1899, xviii, 141; Ophth. Rec., April, 1902.

almost its entire area, in an eye previously damaged by glaucoma. Without apparent cause the ball ruptured, the tear being horizontal and about 7 mm. long. A large hemorrhage, carrying with it the crystalline lens, occurred. The ball was enucleated.

TERSON'S CASE.[10]—A woman, aged 71, with chronic glaucoma in the left eye for eight years, had been blind one year. She had many attacks of pain. A vertical rupture of the cornea was found, with protrusion of the contents of globe. The patient had experienced a violent pain in the eye after going to bed, but this subsided and she went to sleep. An hour later she awoke to find that a hemorrhage had taken place. The protrusion was cut off and the ball healed.

GAMO PINTO'S CASE.[11]—A woman, aged 63, had absolute glaucoma in the left eye. The right was also glaucomatous, and was operated on (iridectomy) with good results. The cornea of the left eye ulcerated later. After two weeks the cornea ruptured, followed by a profuse hemorrhage and expulsion of the ocular contents and membranes. The eye was enucleated.

CHEATHAM'S CASE.[12]—A woman, aged 65, born blind in the left eye, for four years had been subject to attacks of severe pain, lasting several weeks. During such an attack the ball ruptured, the lens escaped and a profuse hemorrhage followed.

Figure 3.—A section to show the chorioidal vessels under higher power

The ball was enucleated, and the retina and chorioid found to be detached and the ball filled with clotted blood.

BIALETTI'S CASES.[13]—*Case 1.*—The patient was a man, aged 70. The right eye was lost from trauma. For ten months he had had attacks of acute glaucoma in the left eye. In both eyes tension was + 3, the diagnosis being absolute glaucoma with cataract in the right eye, and recurrent glaucoma in the left. The lens was extracted from the right eye with loss of a "quantity of vitreous and blood." In the left eye sclerotomy, and later, iridectomy, was performed. The right eye atrophied, and three years after the operation the left eye ruptured, with violent pain, hemorrhage and loss of the lens and vitreous. The cornea was ruptured parallel with its circumference. The protruding mass was excised and the eye became quiet.

Case 2.—A man, aged 75, had glaucoma in the right eye for thirteen years, during which time he had undergone iridectomy. Rupture of the ball occurred with hemorrhage and extrusion of the ocular contents. Excision of the protruding mass was followed by atrophy of the ball.

LISSIGYN'S CASE.[14]—A woman of 65, blind for a year, had severe hemorrhage with a rupture 4 or 5 mm. long in the lower third of the cornea; described as a perforating ulcer due to glaucomatous degeneration.

GILFILLAN'S CASE.[15]—A woman, aged 87, with paralysis agitans and poor mental and physical condition and arteriosclerosis, had senile cataract and large corneal opacities in each eye, but no staphyloma; no note as to tension. While lying in bed she experienced a sharp pain in the left eye, and when the house surgeon reached her there had been a large hemorrhage from the eye, with expulsion of the lens and prolapse of the iris. The protruding mass was cut away and the eye healed. The rupture was in the center of the cornea and large enough to permit the lens to escape.

FAGE'S CASE.[16]—A man had absolute glaucoma, with exacerbations, in the left eye. At one visit for such an attack the cornea was noted to be sound. Two and a half months later he returned with a horizontal central rupture of the cornea, 3 mm. long. There was no escape of the ocular contents, though the anterior chamber was filled with blood and clots lay in the corneal wound. Enucleation was performed.

SHEPHERD'S CASE.[17]—A woman, aged 81, had chronic glaucoma in one eye for a few years. The eye was blind and for a week had been painful. One night the ball burst across the middle of the cornea, this being followed by free hemorrhage and partial escape of the ocular contents. The eye was removed. The cornea did not show any evidences of ulceration.

INGALLS' CASE.[18]—A woman, aged 89, had been blind in the right eye for two years. Following a severe pain the eye ruptured, with free hemorrhage and protrusion of the iris through a rent in the lower half of the cornea. The eye was removed and the whole contents found to have been expelled. The margins of the corneal perforation were smooth and not ulcerated.

HAUENSCHILD'S CASE.[19]—A woman, aged 28, with apparently normal eyes, was seized with a violent pain in her right eye. The next day there was widespread subconjunctival and subpalpebral ecchymosis, and slight exophthalmus. The anterior chamber was entirely filled with blood. The eye was blind. When the blood was absorbed a rupture was seen in the sclera, 1 mm. above the corneal border, into which the iris had prolapsed. The rupture was 6 mm. long and concentric with the corneal border. The blood was absorbed and the eye shrunk. The other eye was normal.

HOUDART'S CASE.[20]—A man, aged 72, was blind in both eyes from glaucoma. The right eye was affected also with a cataract and had been blind four years. While working in a stooping position cutting grass, the patient was suddenly siezed with a frightful pain in the head, vision seemed red, and he fell unconscious to the ground. Three hours later the cornea was found to be ruptured through the middle, an abundant hemorrhage had occurred and the lens and probably other ocular contents had escaped. No intervention was allowed.

BALL'S CASE.[21]—Ball merely mentions that he has seen such a case.

It will be noticed that the patients, with one exception (Hauenschild), were old people, aged from 56 to 89. Indeed, with the single exception of Zimmermann's patient, aged 56, none were less than 63. In two

10. Terson, M.: Ophth. Rev., 1901, xx, 47.
11. Pinto, Gamo: Encyclopédie française d'ophtalmologie, 1906, v, 52.
12. Cheatham, W.: Louisville Med. News, 1879, viii, 292.
13. Bialetti, C.: Ann. di ottalmol., 1908, xxxvii, 27.
14. Lissigyn: Aug. Gesellsch., 1900; Cf. Coppez, H.: Bull. et mém. Soc. franç. d'Opht., 1908, xxv, 287.
15. Gilfillan, W. W.: Tr. Ophth. Soc., New York, Acad. Med., Arch. Ophth., 1902, xxxi, 66.
16. Fage: l'Opht. prov., February, 1909; abstr. in Ophthalmoscope, January, 1910, viii, 42.
17. Shepherd, Cyril: Ophthalmoscope, 1909, vii, No. 7.
18. Ingalls, J. W.: Tr. Am. Ophth. Soc., 1909.
19. Hauenschild: München. med. Wchnschr., 1900, No. 31; abstr. in Ann. Ophth., 1900, ix, 657.
20. Houdart: Clinique Opht., July 26, 1906; abstr. in Ophthalmology, January, 1907, and Ann. of Ophth., xv, 603.
21. Ball, J. M.: Modern Ophthalmology, Philadelphia, F. A. Davis and Co., p. 418.

instances (Fage and Ball) the age is not mentioned. Hauenschild's case is evidently in a different category from all the others, and, excluding this case, the patients were all the subjects of chronic glaucoma. In many of them this was established before the rupture of the eye; in others the subsequent examination or previous history makes the presumption of glaucoma plainly justifiable. The hemorrhage in all cases proceeded from the vessels of the chorioid, and the rupture of the ball occurred in the cornea. In nearly all of the cases these phenomena were spontaneous, there being usually no apparent cause, such as trauma or straining. We might profitably consider this condition, since the number of cases reported indicate that it is not so rare as not to be of general interest, and inquire how it happens, when and why it may happen, and what is our duty in case it does happen.

In inquiring how spontaneous rupture of a glaucomatous eye comes about, we find a difference of opinion among those who have observed it. Some assert that the rupture of the cornea is primary, and due to the perforation of an ulcer, or the traumatic rupture of an ulcerated or otherwise weakened cornea, the resulting lowered tension permitting the unsupported intra-ocular vessels to break, with resulting hemorrhage. Others contend that the intra-ocular hemorrhage is primary, and that the increased tension causes rupture of the cornea, which may or may not have been previously weakened by disease.

Whichever view we consider, it can be justified by analogy, which is well, since in a given case one cannot always be sure of the sequence of events. In favor of the idea that the rupture of the cornea is primary and the hemorrhage secondary, the occurrence of chorioidal hemorrhage during a cataract extraction could be cited. Here we see the rupture of the chorioidal vessels occur when the corneal incision and evacuation of aqueous has lowered the pressure which supports the vessels. In support of the other theory, that the hemorrhage is the primary event, the occurrence of cerebral hemorrhage might be regarded as analogous. With or without apparent exciting cause, but presumably accompanying an increase of blood-pressure from some cause, the diseased vessel breaks. The question now arises whether a hemorrhage from the choroidal vessels can increase the intra-ocular pressure to such a point that rupture of the cornea will follow. Among those who have reported cases a difference of opinion is found. Villard, Verhoeff and Spalding, Valude (discussing Terson's cases, q. v.), Gamo Pinto, Bialetti and Lissigyn, express themselves more or less emphatically to the effect that the sequence of events is, first, the rupture of an ulcerated cornea, and then the hemorrhage. Verhoeff and Spalding, in particular, question the possibility of a hemorrhage raising the pressure enough to rupture the cornea, since the intra-ocular pressure is already as great as, and dependent on, the blood-pressure. A rupture of an intra-ocular vessel, then, does not, according to these observers, increase the intra-ocular tension. On the contrary, Wibo, Gilfillan, Millikin, Fage and Ingalls think that the hemorrhage preceded, and presumably caused, the rupture in the cases they observed. Shepherd says that the cornea in his patient was normal, and to the best of my belief it was so in my patient as well.[22]

In cases not observed before rupture it may be hard to tell, since all of the ulcerated corneal tissue may be torn away by the passage of the blood and membranes through the rent. While the pathologic report on the case herewith presented speaks of infiltration of the cornea, the fact that enucleation was not done till three days after the rupture gives a sufficient interval to permit these changes to have taken place after the accident. In this connection I would call attention to the drawings of the microscopic sections.

In reference to the point raised by Verhoeff and Spalding, we now believe that the intra-ocular fluids are not secretions, but the product of a filtration process. Such a filtration can take place only when the pressure in the blood-vessels, whence the fluids come, is greater than the pressure within the eyeball, into which the fluid filters. The intra-ocular pressure cannot exceed the blood-pressure, but, on the other hand, it would seem that the blood-pressure must exceed the intra-ocular pressure. It has been shown experimentally[23] that when the intra-ocular pressure is raised to 50 mm. of mercury filtration ceases. This would indicate the intravascular pressure, which is about twice that of the normal intra-ocular pressure. If this is correct, then blood escaping into the eye with a *vis a tergo* equal to the intravascular pressure could exert sufficient force to rupture a weakened cornea.

The occurrence of this distressing accident is predicated on the existence of several conditions. A study of the reported cases would justify one in saying that these conditions are glaucoma, vascular disease and probably an ulcerated or otherwise weakened cornea.

Glaucoma, on theoretical grounds, would not appear essential to the occurrence of this accident, but, in fact, it is present with too great regularity to be regarded as a coincidence. The vascular changes, with increased blood-pressure, necessary to produce the condition in question, seem always to produce glaucoma, a fact easily understood in the light of the now general appreciation of the close relation between glaucoma and vascular disease.

The vascular changes have been more often inferred than demonstrated in the reported cases. While arteriosclerosis is often mentioned as being present, the conditions of the blood-vessels in the enucleated eye are mentioned only by Coppez and Ingalls. Degenerative and proliferative changes in the blood-vessels of the retina and uveal tract are described by these writers, those in the uveal tract being the ones that concern us most. The changes described and illustrated in my own case may be regarded as typical.

It is well known that hemorrhage into a glaucomatous eye may occur without producing rupture of the cornea. Such a case is described by Graefenberg,[24] and they are probably not very rare. They are sometimes erroneously referred to as cases of hemorrhagic glaucoma.

In the absence of the necessary degree of vascular degeneration and increased blood-pressure, the cornea can be ruptured or destroyed in a glaucomatous eye, without precipitating a hemorrhage. The commonest example of this is when an operation, involving corneal section, is performed for the relief of glaucoma. In addition to these common instances, two cases have come under my notice which still further emphasize this point.

22. It is interesting to note that at the end of the abstract of Houdart's case appearing in the Annals of Ophthalmology (xv, 603), the reviewer doubts the possibility of any intra-ocular hemorrhage having sufficient force to cause a rupture of the cornea, and thinks that the hemorrhage was probably spontaneous, but the corneal rupture almost certainly caused by the patient striking the eye when he fell unconscious to the ground.

23. Niesnamoff: Arch. f. Ophth, 1906, xlii, 4; Quoted by Parsons: The Pathology of the Eye, New York, 1906, iii, 967, G. P. Putnam's Sons.

24. Graefenberg: Arch. f. Augenh., September, 1906, lvi, 1; abstr. in Ann. Ophth., 1907, xvi, 355.

A woman, aged 60, without manifest vascular disease, was attacked with glaucoma in the right eye in September, 1907. Although repeatedly advised by her physician to be operated on she would not consent. I was asked to see her on July 13, 1909, and found the whole cornea destroyed, its place being occupied by the iris, covered with granulations. Enucleation was performed without accident.

A little boy, aged 5, was brought to me for an injury to his right eye from a fall. I found buphthalmia and extensive corneal rupture. There was no intraocular hemorrhage, doubtless owing to the normal condition of his blood vessels. The eye was enucleated.

This is an occurrence, then, that must be put in our category of possibilities in cases of chronic glaucoma of the subacute or chronic congestive type. Simple glaucoma apparently does not cause it, and acute glaucoma would probably cause a scleral ectasia (ciliary staphyloma) instead.

The indications for treatment are briefly stated. The eye is lost and in general should be removed. If not it will atrophy. There is no exception to this in the reported cases in which the eye was not removed. No sympathetic trouble seems to have been so far observed to follow the retention of an eye so damaged, one cause of its non-occurrence being the advanced age, and consequent short subsequent lives, of the unfortunate patients.

Randolph Building.

ABSTRACT OF DISCUSSION

DR. J. M. RAY, Louisville, Ky.: I saw the case reported by Dr. Ellett and had the man under my care for a long while before Dr. Ellett saw him, first at his home, when he was suffering from iritis in one eye, and later on in the other. It continued to recur at long intervals first in one eye and then in the other, up to the time I last saw him. Each attack of iritis was accompanied by increased tension. The iris presented a number of adhesions to the lens capsule and was atrophic. The cornea would become hazy during these attacks and the vitreous contained floating particles. The inflamed condition of the iris and the opacities in the lens and vitreous interfered with a satisfactory ophthalmoscopic examination. The patient while under my care showed nothing more unusual than a relapsing iritis of a subacute character, accompanied by increase of tension during the attacks only. Stigmata of former specific disease in pharynx and nose were present. I advised him to have an iridectomy done, not so much because of tension, which was never very great at any time I saw him, but to check the relapsing iris inflammation that was leading to degenerative changes in the ciliary body and chorioid. I can see very well how an acute glaucoma could have developed between the time I last saw him and the time of Dr. Ellett's visit. I believe that tension in an eye otherwise degenerated from an old irido-chorioiditis could have produced sufficient interference with the nutrition of the cornea to lead to its rupture, and then the hemorrhage, occurring as a result of the removal of the normal resistance on the walls of the sclerosed retinal and chorioidal vessels.

It would seem to be impossible that the tension in an eye from rupture of a blood-vessel in its interior could be greater than the pressure in the blood-vessel that was the seat of rupture. Therefore, knowing the great resisting power exerted by the ocular tunics, it seems unreasonable for such a condition to take place in an eye where the ocular structures are of normal resistance.

From a consideration of the report made by Dr. Ellett and the eye as I saw it, it appears to me an ideal case for the occurrence of such a condition. Relapsing attacks of iritis, each attack accompanied by glaucomatous symptoms, with, eventually, degenerative changes in all the ocular structures, are the ones in which acute hemorrhagic glaucoma are liable to occur. While I feel sure the patient did not suffer from corneal ulceration, the changes preceding the fulminating glaucoma were such as would interfere seriously with the nutrition of his cornea and make it less resistant to an acute attack of tension.

Three weeks before he was seen by Dr. Ellett he presented some ciliary injection, no great tension, a degenerated iris, and a hazy cornea. I gave him a letter to Dr. Ellett, fearing he might have trouble while on his visit to Memphis. I have no note of the arterio-sclerosis, but his family physician had been treating him for rheumatism. He died most probably from cerebral hemorrhage, as near as I could get at the facts on inquiry.

DR. S. L. LEDBETTER, Birmingham, Ala.: Last fall, at the meeting of the Southern Medical Association, at New Orleans, I read a paper in which I reported a case of double glaucoma with ruptures occurring at an interval of a year. The case was first seen by Dr. Sibley, of Birmingham, and the eye removed after the rupture. Just one year later I was called to see the same patient under similar circumstances; the ball had ruptured. The history, as I got it, showed clearly an inflammatory glaucoma. There had been a history of severe pain for two or three days, with intense pain just before the rupture, and when I saw the case there was a wide, open wound, and the ball was filled with clot. The patient was an elderly woman, 65 years of age, with probably arteriosclerosis. I learned that she died two or three months after the last operation. I do not know the cause of death. The case was interesting to me because of the history of having lost both eyes from the same condition. The attending physician told me he had seen her but once or twice before sending for me: that the eye was in an inflammatory condition, with a haziness of the cornea. Dr. Ellett was at the meeting at New Orleans, but left before I read my paper, so I do not charge him with any negligence in not mentioning my case.

DR. R. H. T. MANN, Texarkana, Tex.: I agree with Dr. Ray that the intraocular hemorrhage had nothing to do with the rupture of this cornea, or it does not ordinarily. I have a patient, a physician, who came into my office with a degenerated eye and said: "I want to show you something very peculiar about this eye." He held his head down, and immediately the anterior chamber filled with blood. I do not know the cause of it, but he said it had been so for years. He could produce the hemorrhage at any time. I could not see the back of the eye. I advised him to have it enucleated. He still has the eye. I have seen it a number of times. It certainly shows to me that the blood in the eye would not produce the rupture.

DR. E. C. ELLETT, Memphis, Tenn.: Since the presession reprints appeared Dr. Lewis H. Taylor has written to call my attention to a case which he reported to this Section in 1908 (*Tr. Sect. on Ophth., A. M. A.*, 1908, p. 125) in discussing Dr. Black's paper on "Cardio-vascular Diseases." This was overlooked because titles were consulted in searching for other case reports. Dr. Taylor's case was one of repeated intraocular hemorrhages, with resulting increase of intraocular pressure and rupture of the ball, somewhat different in character from the other cases which I have quoted. In addition to one case reported by Dr. Verhoeff, which I have quoted, he has called my attention to another case of rupture associated with chorioidal sarcoma reported by him in the *Archives of Ophthalmology*, 1904, xxxiii, No. 3. He has also protested against what I had to say in regard to his views on the question of whether the corneal rupture or the hemorrhage was the primary incident. I am glad to quote from his letter, and to say that it was far from my intention to misrepresent anyone, nor can I see that I have done so:

"In your discussion of the case of rupture of the cornea due to intraocular sarcoma reported by Dr. Spalding and myself, I think you give a wrong impression as to our view in regard to the cause of the rupture. In the first place we did not come to a positive opinion as to whether the hemorrhage was primary or secondary, but at that time simply regarded it as more probable that it was secondary. You state that 'a rupture of an intraocular vessel then, does not, according to these observers increase the intraocular pressure.' What we actually said was that 'it is doubtful if an intraocular hemorrhage would appreciably increase the pressure in an eye already under a high tension, for the increase in pressure could be no greater than the difference between the pressure of the blood within the ruptured vessels and the pressure already present in the eye.' What we meant by this was that since the eye had been under an extremely high tension for several weeks, as indicated by the clinical history, the added pressure due to an intraocular hemor-

rhage would probably be too slight to explain the rupture of the cornea if the latter was intact, and if the latter was ulcerated it would be more reasonable to suppose that the ulcer was due to high tension. You imply that we did not know that the intraocular pressure of a normal eye is much less than the blood pressure. This fact is of course known even to a tyro, and the above quotation shows that we were aware of it. You will be interested to know, however, that I later definitely determined that the hemorrhage was primary in this particular case. I am sending you a reprint in which I explain this (page 248, Case 3). In this paper I also report another case of the same kind (Case 2) which I am sorry that you could not have included in your list. In this paper also you will notice that I call attention to the ease with which an intraocular sarcoma may be overlooked in an eye filled with blood, and I have no doubt that many have been so overlooked. In regard to spontaneous rupture of the cornea in glaucoma in general I am sure that the hemorrhage may be either primary or secondary, but as to which is the more frequent I am still undecided."

LUTEIN EXTRACT IN THE TREATMENT OF DECREASED MENSTRUATION AND THE PREMATURE MENOPAUSE

ELLICE McDONALD, M.D.
NEW YORK

Disturbances of menstruation are always difficult of treatment. The factors which cause and control menstruation are so little known and understood that treatment is largely empirical and experimental. Investigation into the function of the ovary and its influence on menstruation and pregnancy are, however, beginning to shed new light on these processes, and give hope of the relief of these conditions by scientific treatment.

INTERNAL SECRETION OF THE OVARY

The function of the ovary and the effect of its internal secretion are becoming better understood, and the influence of the corpus luteum on menstruation and pregnancy are now being studied experimentally in animals.

Brown-Séquard[1] appears to have been the first to suggest an internal secretion for the ovary and supposed that it was concerned in the secondary sexual characteristics. Since then many investigators have sought the presence and mechanism of the production of this internal secretion. Gustav Born[2] first suggested the hypothesis that the corpus luteum of the ovary was a gland with an internal secretion which affected the uterus and presided over the nidation and development of the ovum. Fraenkel,[3] by means of extensive experiments claims to have maintained Born's hypothesis that the corpus luteum is a gland with an internal secretion and that the corpus luteum causes the menses. He claims that as the corpus luteum is an organ sharply defined from the rest of the ovarian substance, and surrounded by connective tissue, histologically it resembles a gland, being similar to the liver or suprarenal. He holds that there is no essential difference between the true and false corpora lutea, which are ovarian glands controlling the nutrition of the uterus from maidenhood to menopause and causing insertion and development of the fertilized egg, and menstruation when the egg remains unfertilized.

TROPHIC INFLUENCE OF CORPUS LUTEUM

These facts are upheld by a long series of his experiments on rabbits, in which he found that if the corpus luteum was destroyed during the early part of pregnancy, while embedding of the ovum was in process, pregnancy always terminated. The trophic influence of the corpus luteum, carried by the vessels, is exercised on the uterus and is necessary to the insertion of the egg. The influence of the so-called false corpus luteum was also determined on non-gravid animals by burning them out, when temporary atrophy of the uterus occurred. Also, in a number of non-gravid women at operation, the corpora lutea were burned out, with the result that menstruation remained absent for one or two periods.

Daels[4] attacks Fraenkel's conclusions as being too sweeping. He denies the hypothesis of a specific function of the corpus luteum in regard to the embedding and development of the ovum. He also denies that the development of the corpus luteum, with its internal secretion, produces menstruation or that maturation of the follicle and menstruation are in a regular causal relation to each other.

While Fraenkel's conclusions are sweeping and can be maintained only by facts very difficult of proof, Daels' denial of the value of his work in its entirety is unjustified, and it may be considered proved that while maturation of the follicle and the secretory action of the corpus luteum may not cause the menses, at least menstruation is much influenced by it. We know undoubtedly that menstruation cannot occur without the ovaries and that the formation of the corpus luteum is a periodic affair, and may be of the same periodicity as menstruation. It is probable, therefore, that the corpus luteum may have an action on the uterus as a hormone, or "chemical messenger." Just as the injection of dilute mineral acid into the duodenum provokes a secretion of pancreatic juice, so the secretion of the luteum may stimulate the uterus to menstruation or aid in embedding the ovum.

Kleinhaus and Schenck[5] have brought additional evidence of the influence of the corpus luteum on fertilization. Their experiments show that, after the embedding of the ovum, destruction of the corpus luteum does not cause interference with the pregnancy; but before the ovum is embedded, termination of the pregnancy usually occurs.

INFLUENCE OF THE OVARY ON UTERINE NUTRITION

Carmichael and Marshall,[6] from their experiments on rabbits, also show the great influence of the ovary on uterine nutrition. They state that removal of the ovaries in young animals prevents the development of the uterus and Fallopian tubes. These remain in an infantile condition, but otherwise, the growth and general nutrition of the animals seems unaffected. They state that removal of the uterus in the adult animal does not give rise to any degenerative change in the ovaries if the vascular connections of the latter are intact. Bond,[7] however, claims there is evidence that there is a substance, a clear watery saline fluid, of low specific gravity, which is elaborated in the uterus between menses, which stimulates the growth of the corpora lutea, and that its absence favors overgrowth of the lutein tissue in the ovary. Holzbach,[8] however, has shown that the ovaries will persist in their function in women after removal of the uterus, and that an adequate amount of ovarian tissue, capable of function, was found in four patients, reexamined several years after the first operation of hysterectomy.

Rebaudi[9] had also shown that the removal of the ovary is prone to cause a compensatory hypertrophy in the other glands of internal secretion. He removed the ovaries in animals and found within two weeks a gradual progressive hypertrophy of the islands of Langerhans

1. Brown-Séquard: Compt. rend. Soc. de biol., 1889.
2. Born: Quoted by Fraenkel, Arch. f. Gynak., 1903, xviii, 438.
3. Franekel: Arch. f. Gynak., 1903, lxviii, 438.
4. Daels: Surg., Gynec. and Obst., February, 1908.
5. Kleinhaus and Schenck: Ztschr. f. Geburtsh. u. Gynäk., 1909, lxi, 2.
6. Carmichael and Marshall: Brit. Med. Jour., Nov. 3, 1907.
7. Bond: Brit. Med. Jour., July 21, 1909.
8. Holzbach: Arch. f. Gynäk., 1905, lxxx, 2.
9. Rebaudi: Gynéc. mod., December, 1908.

in the pancreas. He then found that when the corpora lutea alone were destroyed with the cautery, the changes occurring in the islands of Langerhans were essentially similar to those which occurred when the whole ovary was removed. He presents this as direct proof that the corpora lutea are organisms of internal secretion, and that they represent the main, if not the only, tissues of the ovary having an internal secretion.

INFLUENCE OF THE THYROID AND SUPRARENAL GLANDS ON SEXUAL CHARACTERISTICS

The influence of the thyroid amongst glands of internal secretion on the menstruation and sexual characteristics is not unknown. Disturbances of menstruation are common with exophthalmic goiter. Patients under my care have had menstrual disturbances following thyroid medication for obesity. The menstrual flow was more profuse, and in some cases, twice monthly. Galante[10] reports three cases of goiter in which there was marked change in the menstruation following galvanization of the thyroid gland.

The suprarenal gland has been shown in a forcible manner by Bullock and Sequeiria to have an influence over sexual development. Several cases in which the suprarenal was the seat of a tumor were collected, and showed that there was marked precocious sexual development in children, with development of the uterus and secondary sexual characteristics.

These evidences of the effect of the glands (other than the ovary) with an internal secretion, show that it is possible that compensatory action may occur in the absence of the direct ovarian or lutein internal secretion.

OVULATION

The time of ovulation is not, as a rule, synchronous with menstruation, but rupture of the follicle may occur at any time in the menstrual cycle. Leopold and Havano,[11] from the investigation of 95 cases at operation, found that in only 59 did ovulation occur at the same time as menstruation, so that it is possible that ovulation may occur at any time in the month. Villemin[12] states that rupture of the follicle usually occurs ten or twelve days before menstruation, and that the period after rupture corresponds to the production of the corpus luteum. These facts are interesting in determining the time at which lutein therapy should be applied each month.

It is obvious, therefore, that the consensus of opinion of experimenters and investigators is that even if the corpus luteum of the ovary is not the cause or exciting stimulus of menstruation, at least this internal secretion of lutein has a distinct influence on the production of menstruation. Therefore, it is possible that if this lutein or corpora lutea is supplied to the organism, menstruation may be influenced in some degree. With this aim, numerous investigators have obtained corpus luteum extract of the ovary from animals, with the hope of being able by opotherapy to influence menstruation and particularly, the surgical menopause.

Fraenkel reported good results with the lutein extract, and Ferroni[13] made a study of the effect of injections of corpora lutea of the ovary in animals, and reported much better results from the lutein alone than when the whole ovary was used. He believed that the effect of the injected corpora lutea was cyclic, and that there was profound metabolic change. Magalhaes[14] also reported good results with the lutein extract clinically. Many others have reported good results.

CLINICAL EXPERIMENTS

With the hope of being able to benefit some of the persistent cases of premature and surgical menopause, I have been for nearly five years experimenting clinically with a desiccated extract of corpora lutea of the ovary of cows, obtained by skinning the outside of the ovary with a sharp knife in order to obtain as much of the essential substance as possible, drying and powdering. The cow was chosen on account of the relatively large amount of lutein cells present.

I did hope to continue this study until 100 cases had been treated and the results studied, when more definite conclusions might be formed and correct therapeutic indication decided; but the publication of an article by Morley,[15] with conclusions contrary to mine, led me to report this small series of 20 cases at this time. Morley, using the same product, supplied the lutein extract to ten physicians, who returned a report of 18 cases to him. Fourteen were cases of surgical menopause, and one physician treated as many as five. It is needless to say that in a condition as obscure as the surgical menopause, as easily subject to spontaneous variations of condition, and as dependent on the individual verbal report as to the condition, this form of investigation is to be deprecated. The surgical menopause is a condition which time cures and psychotherapy may benefit. It can not be expected that definite conclusions can be drawn from one case or therapeutic indications be discovered by five. I have, therefore, been induced to report this small series with the hope that physicians may not be led to expect to find in lutein extract a universal panacea for that protean disturbance, the surgical menopause.

I have treated in all twenty cases. Ten of these cases were of scanty menstruation or approaching premature menopause. Ten were cases of surgical menopause. These cases will be discussed according to these two classes.

PREMATURE MENOPAUSE

The condition of premature menopause is one which attacks comparatively young women, between twenty and thirty-five years, and is marked by lessened menstruation, with various nervous manifestations, such as headaches, flushes and other neuroses. The condition is said by some writers not to occur before 33 years, but the establishment of the complete menopause often extends over several years, and the first effects of the condition are frequently to be observed in much younger women. It is usually associated with the lack of sexual function, as the condition is more common among spinsters and quite often dates from an illness or some definite change in nutrition or environment. This lack of sexual function in these women is curiously in consonance with the experiments of Bond who found that, in unilateral oöphorectomy in animals, the hypertrophic changes in the ovary with the formation of corpora lutea were maintained if repeated copulations were allowed.

In these ten cases of scanty menstruation, seven patients were benefited by the administration of extract of corpora lutea, gr. v. (0.3 gm.), three times daily before meals. The earlier the case was treated, the more definite seemed to be the results. The three chronic cases, in which the patients were not benefited were well-established cases with marked nervous symptoms, and

10. Galante: Ann. di elettr. med. e terapia fisica, 1909.
11. Leopold and Ravano: Arch. f. Gynäk., 1909, lxxxviii, 3.
12. Villemin: La Gynecologie, May, 1908.
13. Ferroni: Ann di. Obstet. Gynec., May, 1907.
14. Magalhaes: Brazil med., Aug. 22, 1907.
15. Morley: Jour. Mich. State Med. Soc., November, 1909.

did not respond to the treatment. One of the patients improved after dilatation of the cervix with the administration of the corpora lutea extract; but as it was doubtful whether the corpora lutea extract, which had been ineffectual, without the operation, was in any way responsible for the improvement, the case was classed amongst the unimproved.

The menstruation, in the seven cases of improvement, increased in amount and duration of flow. Two patients reported marked change in the character of the flow. In one very remarkable case, the patient was brought back to her normal duration of flow, of four days, while taking the lutein extract, and while untreated, menstruated two days. She was treated for three alternate months and flowed four days, while at the three alternate months untreated, she flowed two days. This seemed definite evidence of the effect of the corpora lutea in this case.

SURGICAL MENOPAUSE

Amongst the ten cases of surgical menopause, one patient was made distinctly worse, and the treatment had to be discontinued. Five were not improved and four reported some improvement. The patient who was made worse had had hysterectomy for fibroid tumor, in which an ovary had been left. The treatment was begun immediately after the operation, and caused such severe disturbance at the time of the expected menstrual period that treatment was discontinued. The patient did not suffer as markedly from the surgical menopausal symptoms after the discontinuance of the lutein extract. It is possible that the lutein excited the activity of the remaining ovary.

Another case was one of removal of both tubes and one ovary, with resection of the second, in the hope that by leaving a remnant of the ovary menstruation would continue. The remnant of the ovary remaining was about 2 by 1 cm. The menstruation did not appear for three months; after treatment for one month with lutein extract, menstruation reappeared and continued regularly thereafter. The small remnant of ovary has swollen to the size of a hen's egg, and there is pain in that region before menstruation. It is thought that the enlargement is cystic in character.

The remaining cases of surgical menopause in which the patients were benefited by the lutein extract were those in which the treatment was begun after operation, and there was no way of judging how severe the menopausal symptoms would have been without treatment.

The five patients not benefited had had hysterectomy where the menopausal neurosis was well established.

Thus, in the ten cases of surgical menopause, only one patient was definitely helped. Five were absolutely uninfluenced, and three were doubtful.

If patients with surgical menopause, in whom the uterus has been removed, are expected to be benefited by the lutein extract of the ovary, why are not those patients who have had hysterectomy, with retention of the ovaries, much benefited by the presence of these lutein-forming organs with their internal secretion? Holzbach[16] has shown that the ovary after operation retains its function, and he also states that those patients who retain a functioning ovary suffer in a more marked degree from symptoms of the surgical menopause. The majority of gynecologists now, I think, believe that the retention of the ovary after hysterectomy is ineffectual in the control of the surgical menopause, unless sufficient of the uterus remains to allow menstruation.

16. Holzbach: Arch. f. Gynäk., 1905, lxxx, 2.

INTERNAL SECRETION ONLY ONE FACTOR

The manifestations of the surgical menopause are too varied and extreme to allow explanation by the mere absence of the internal secretion of the ovary. The internal secretion of the ovary is but a factor in the process of the menstrual life. It may be the hormone or "chemical messenger" which stimulates the uterus to one of its functions. Let no one expect to control these physical changes and nervous alterations of the surgical menopause by the supply of an artificial internal secretion of the ovary unless, at the same time, a new uterus to menstruate can be supplied.

But the study of this condition of surgical menopause, with its nervous and often psychopathic symptoms, is one fraught with many pitfalls. Patients are often so influenced by any treatment that it is difficult to decide which is the help. Time cures the condition and the treatment often gets the credit. I have had patients benefited by Eddyism, osteopathy, cold baths and chromium sulphate. However, in my ten cases of surgical menopause, I cannot be sure that any patient was definitely helped except that one in whom the uterus was retained. Gellhorn[17] has reported a somewhat similar case, in which menstruation, which had been absent for six months, reappeared after the administration of ovarian extract, and a regular flow ensued.

Amongst the seven cases of scanty menses or premature menopause, definite improvement resulted. In all cases there was an attempt at the same time to improve the nutrition. Three married women voluntarily stated that there was a definite increase in sexual desire. I did not question any in this regard. One patient, a woman over 45, with commencing menopause, has been under treatment for three years, with the result that the menses are still regular, and after she had been under treatment for eight months she conceived and miscarried. Her last child was born 18 years before this. She still continues the medication in the hope that she has discovered the fountain of youth.

The greatest result in every case was obtained when treatment was begun early and when the treatment was given over at least two weeks of each month. A few patients complained of nausea after meals or in the morning during the treatment.

CONCLUSIONS

The results of this study, small though it be, extending over five years, seems to indicate that the control of the surgical menopause need not be sought in the corpora lutea. Its value is in cases in which the uterus and ovaries or uterus alone are retained. Particularly is it valuable in the treatment of scanty menstruation and the premature menopause. I have treated a number of cases at the outdoor dispensary of the Kensington Hospital for women, with extract of the whole ovary, and never saw any definite results therefrom. But the lutein extract, being the essential part of the ovary, does seem to help in some degree, and should be accompanied in suitable cases, by dilatation of the uterus, with the use of the stem pessary following operation, as advised by Manson.

At least, the administration of lutein is indicated after operations on pregnant women in whom miscarriage is feared. This is particularly true in the early weeks of pregnancy, during the embedding of the ovum, as it has been shown experimentally that the corpus luteum has a definite effect under such circumstances.

174 West Fifty-eighth Street.

17. Gellhorn: Zentralbl. f. Gynäk., Oct. 17, 1907.

THE RELATION OF STUTTERING TO AMUSIA *

E. BOSWORTH McCREADY, M.D.
PITTSBURG, PA.

I have elsewhere[1] defined stuttering as "a condition in which, through lack of coordination of the nervous mechanism controlling the organs of speech, which may include either excessive or deficient innervation, there is a difficulty in enunciation which may comprise either spasmodic effort without articulate sound, or frequent repetition of the same articulate sound before the utterance of the one following. With it may be associated compensatory spasm of muscles not directly involved in speech." While this definition, an adaptation of those of others, seemed satisfactory to me at the time, I have since come to realize that like those of others, it is simply an enumeration of symptoms. To my mind there has never been a satisfactory explanation of the cause of stuttering. To treat it as a neurosis, "a mental tic," is not going far enough. A neurosis it undoubtedly is, after the establishment of the compulsive idea, but calling it such does not explain why certain individuals under the influence of fright, imitation, acute disease or nasopharyngeal irritation, begin to stutter while others equally neurotic and exposed to the same influence do not.

ETIOLOGY

The observations of Scripture[2] emphasizing the fact that practically all stutterers habitually speak in a monotone, are most important, not only from the standpoint of treatment, but also as having a bearing on the etiology. That the monotonous voice is a factor in the causation of stuttering does not at all conflict with Claiborne's suggestion[3] that stuttering should be classed among the conditions caused by congenital defects in the centers controlling speech. In a paper[4] read a short time ago before the National Association for the Study and Education of Exceptional Children, I placed stuttering among the group of developmental defects caused by biologic variations in centers and commissures through which are derived perceptions of music and rhythm. If we accept the theory held by Edgren and others that the different forms of amusia are dependent on damage to special centers and commissures which are adjacent to, but not identical with, those whose damage gives rise to the corresponding forms of speech defect, we must assume that an auditory center for tones will correspond with the auditory word-center, a kinesthetic tone-center with the kinesthetic speech-center and a visual center for notes with the visual word-center.

According to Bastian,[5] "the existence of tone-deafness as an isolated and inherent defect is probably far from rare." There are persons who are incapable of discriminating between the two notes of an octave and who notwithstanding the most frequent opportunities of hearing music remain quite incapable of distinguishing one tune from another. Variations in the kinesthetic center or its commissures would account for the inability of some individuals to "carry a tune." There are some persons who, while possessing a "musical ear," are still unable to reproduce what they have heard. I have, on a previous occasion,[4] drawn attention to the connection between amblymusia and idioglossia.

Nature is all curves and harmony. We are constantly receiving, through the special senses, impressions suggestive of modulation, inflection and consonance. On the visual center are registered impressions of form derived from the contour of hills and sky, from the flight of birds, the waving of the branches of trees, the falling of leaves; on the auditory center, from the sound of running water, the soughing of the wind, the rustle of leaves, the songs of birds; on the centers controlling the sense of touch are registered the impressions received from the handling of smooth and rounded objects, and on the general kinesthetic centers the impressions of rhythmical movements made in walking, running, bending, climbing, breathing, etc.

It seems therefore not unreasonable to suppose that these various impressions, registered as they are, in areas of which the centers concerned in speech are a part, have much to do not only with its development, but also with the proper control of the nervous mechanism of the speech-forming organs. To state more clearly, it would appear that impressions of modulation, inflection, consonance and rhythm are registered on special centers which are a part of the general visual, auditory and kinesthetic areas, and that each of these beside being in direct relationship with the word-center of the particular area of which it is a part, is also in commissural relationship with the corresponding centers of other areas.

I further believe that the monotonous voice of the stutterer is the result of a biologic variation in one of the music centers or its commissures, most likely, in the kinesthetic center or the commissure between it and the auditory music-center. It may be held that not all those with unmelodious voices stutter. While they may not do so habitually I believe it will be found that they will sometimes stutter, especially when laboring under strong emotion or fatigue, or when in poor physical condition. The child does not stutter from the time he begins to speak but if he is the possessor of a monotonous voice he will do so as soon as he is subjected to one of the exciting causes mentioned above or to reflex irritation from any source, be it eye-strain, phimosis, adenoids, or worms. The compulsive idea then becomes fixed. I have been asked why, if stuttering bears the relation to amusia which I claim it does, many stutterers are able to sing. I think this fact can be explained on the same basis that Dercum explains the same ability in some cases of aphasia. He says:[6] "The curious instance of the singing aphasics can only be met by a similar explanation (reenforcement). For instance, I had under my care some years ago a Broca aphasic, whose speech was limited to "yes," "no" and a few brief expletives. He could, however, sing—among other things—"Auld Lang Syne," carrying the air well and enunciating each word clearly. No other explanation, it would seem to me, than that of reenforcement overcoming inhibition can apply in such a case."

METHODS OF TREATMENT

If we accept the theory that stuttering is due to biologic variations in centers which are a part of or are

* Read in the Section on Nervous and Mental Diseases of the American Medical Association, at the Sixty-first Annual Session, held at St. Louis, June, 1910.

1. Stuttering in School Children; Its Prevalence and Treatment, St. Louis Med. Rev., August, 1909.
2. Scripture, E. W.: Treatment of Stuttering and Stammering, Med. Rec., New York, March 21, 1908.
3. Claiborne, J. Herbert: THE JOURNAL A. M. A., April 18, 1908.
4. Biological Variations in Higher Cerebral Centers Causing Retardation. Paper read before The National Association for the Study and Education of Exceptional Children, April 21, 1910.
5. Bastian, H. Charlton: Aphasia and Other Speech Defects, p. 295.
6. Dercum, F. X.: The Interpretation of Aphasia, Am. Jour. Med. Sc., November, 1909.

closely associated with centers making up the zone of language, the reason for the success and failure of many empirical methods of treatment of this disease are apparent. Practically every method that has been suggested is based both on distraction from the compulsive idea and on oft-repeated impressions of correct speaking. In other words, the patient receives from his instructor auditory and visual impressions of properly inflected and articulated words, and further than this by repetition educates his own brain cells, assisting them to perform their proper function in unison with other cells, or by forcing the opposite hemisphere to supply a center similar to that which is imperfectly developed. This is done principally through the glosso-kinesthetic center acting in conjunction with the various music-centers. Failure to cure and relapse after apparent cure are due to development of the glosso-kinesthetic center, with failure to bring about functional relationship with the music-centers. The "melody cure" advocated by Dr. Scripture fulfills all the indications necessary for a complete cure beyond danger of relapse. It should, however, be persisted in until every assurance is felt that the centers controlling melodious speech have assumed the necessary state of activity. Every effort should be made to imprint musical impressions through every available avenue, and to allow every possible opportunity for their expression. It is a well-known fact that music, dancing, rhythmical movements, drawing, etc., are great aids in the development of speech and of general cerebral activity in the backward and feeble-minded.

Another great aid in the treatment of this class of cases is the reversal of dexterity as advocated by Claiborne.[3] It is generally conceded that in right-handed individuals the complicated mechanism of speech is controlled by the zone of language in the left cerebral hemisphere.

"It must needs be admitted that there is a general auditory, a general visual area, and a general kinesthetic area in the right hemisphere, and that incoming stimuli make on it an impression similar to that which they do on the so-called "educated" hemisphere. These impressions are bilateral in reception, but unilateral in interpretation. This unity of interpretation is determined by commissural fibers of the corpus callosum. Now the same factors that determine right-handedness determine also that the left hemisphere shall be the executive speech side, but the elementary work is done on both sides."[7]

Now as Claiborne says,[3] "It is in the highest degree unlikely that a congenital defect should occur on both sides of the brain and in the same place."

In a biologic variation in brain-centers not so much can be expected from restitution of non-functionating cells as from a process of functional compensation, brought about by the undamaged hemisphere gradually taking on new or greatly developed functions.

General kinesthetic impressions have a decided influence on the development of the speech-centers as is proved by the marked improvement shown by cerebral hemiplegics after tenotomy. The more frequent and dexterous use of the muscles of one side would, therefore, assist materially in the development of the speech-centers of the opposite hemisphere.

I have reported two cases of congenital word-blindness in boys both of whom were originally right-handed who learned to read after they had become proficient in the use of the left hand together with special training. In one,[8] a youth of twenty, who stuttered very badly, I noticed a decided improvement in speech soon after he had begun to use the left hand. In fact, although I had had him under treatment for several months I had been unable to get him to speak with any degree of inflection, until after he had begun the use of the left hand. His subsequent improvement in speech was very rapid. It has been my custom for the past year, in addition to giving all my stuttering patients exercises directed toward correcting their various defects of speech, to advise them to use, when right-handed, the left hand in preference to the right. I am fully satisfied of the value of this procedure, and while I do not believe that the reversal of dexterity will in itself correct stuttering or any other developmental defect due to a biologic variation in special cerebral centers, I do believe that it will prove itself a very valuable aid when taken in conjunction with other approved methods of treatment.

CONCLUSIONS

While incapable of proof, it is reasonable to suppose:

1. That the defective use of the muscles of inspiration, expiration, and of the lips, tongue and throat, resulting in stuttering is the "result of imperfect coordination, caused by disconnected and erratic discharges from the cortex."

2. That this incoordination is between the nervous mechanism controlling the acts of vocalization and articulation and the centers having for their function the appreciation and expression of melody and harmony, and is due to a biologic variation in such a center or its commissures.

3. That the cure of stuttering is only accomplished by a process of compensation brought about by the education of cells previously non-functionating, and by forcing the opposite hemisphere to supply a center similar to that which is imperfectly developed. To this end the reversal of dexterity would seem to be a reasonable procedure.

242 South Highland Avenue.

7. Collins, Joseph: Ref. Handb. Med. Sc., i, 419.

8. Congenital Word-Blindness as a Cause of Backwardness in School Children: Report of a Case Associated with Stuttering, Pennsylvania Med. Jour., January, 1910.

THE TREATMENT OF FURUNCULOSIS

JOHN T. BOWEN, M.D.
Edward Wigglesworth Professor of Dermatology, Harvard University
BOSTON

By furunculosis is generally meant the repeated outbreak of furuncles either singly or in numbers, extending over a period varying from several weeks to many months and even years.

As to the etiology of this condition the last word has by no means been said. We know that a furuncle is usually, if not always, caused by the infection of a hair or sebaceous follicle with the *Staphylococcus pyogenes aureus*. We know that furuncles are propagated by auto-inoculation, the new lesion being produced by infection from an old one. We know that diabetes, debility, and albuminuria are conditions that may increase the susceptibility of the individual to infection in this way. We know that the development of furuncles is facilitated by external irritants to the skin, of whatever nature. Apart from the above etiologic factors which are present in only a small number of instances, we do not know what it is that produces in the majority of the

cases this peculiar susceptibility to inoculation of the follicles with the staphylococcus.

With regard to the treatment of individual furuncles, many and various are the methods resorted to. It is not my purpose to enlarge on these procedures, or their relative efficiency. Suffice it to say that I do not believe that early incision shortens the duration; nor do I believe that poulticing is to be recommended, except in rare instances, as it is contrary to aseptic principles.

In calling attention to a method of treating the skin of those afflicted with furunculosis that has proved universally effective in a large number of cases during the last fifteen years, I do not wish to detract in the slightest degree from the vaccine method. I have seen the most brilliant results from the latter treatment, remarkable for the quickness with which relief was afforded. I know of no method that compares with it, in a certain number of cases. Nevertheless, it is not successful in all cases, and I have happened to have a considerable number of cases that had been treated by the vaccine method by most competent people without any success, that have yielded to the local treatment that I am about to describe.

No originality is claimed for this treatment. Some of its principles were suggested to me many years ago by Dr. James C. White. In many of the text-books some of its essentials are referred to. The principle is simply to keep the skin as far as possible sterile.

In the first place the patient is directed to wash the whole body with warm water and soap in the morning and at night. This part of the treatment I regard as most essential. It is true that when the furuncles have been confined to the neck it may be sufficient to wash only the upper half of the body, but it is not so thorough a procedure. After this thorough washing of the whole body with soap and water, and the skin has been dried, the whole surface is then bathed with a saturated solution of boracic acid in water. Other antiseptic solutions may be used, as corrosive sublimate, but I prefer the boracic acid solution, and regard it as most effective. The skin is allowed to dry without wiping, and then the individual furuncles are dressed with the following ointment spread on cotton or linen, and bound on if possible.

R.	gm.		
Boracic acid	4		
Precipitated sulphur	4	or	āā ʒi
Carbolized petrolatum	32		ʒi

Early opening of the individual lesions is not advised, incision being resorted to only after the lesions have become very painful and mature.

Another important point is to have all the clothing that comes next to the skin changed daily. It is unquestionably true that the germs are often retained in and reinoculated from the collars and underclothing.

It is not to be understood that in applying this treatment, no thought should be given to the improvement of the general condition by internal and hygienic measures. On the contrary, everything should be done on general therapeutic principles to promote the well-being of the patient.

It is not claimed that this method often accomplishes the brilliant results that are attained by the vaccine method. Nevertheless, it has rarely failed when carried out with care and patience, and has, in my experience, frequently succeeded where the vaccine treatment has failed. I am convinced that a careful trial of it will prove that the statement made at the Sixth International Dermatological Congress by a distinguished foreign visitor, that the opsonic treatment is the only form of treatment for general furunculosis which is in the slightest degree reliable, must be modified considerably when the results obtained from this method of sterilization are recognized.

14 Marlborough Street.

A MODIFIED EXTRACTOR FOR THE REMOVAL OF VARICOSE VEINS OF THE LEG

W. WAYNE BABCOCK, M.D.
PHILADELPHIA

This instrument is a modification of the simple device I described in 1907,[1] for the removal of varicose veins of the leg. The larger acorn tip of the instrument has been increased in size and its surface toward the shaft of the instrument so cupped as to catch the wall of the vein and prevent its inversion and slipping over the end of the instrument. In using the instrument the vein is exposed either at the upper or lower termination of the segment to be removed. With the internal saphenous vein, which is most frequently extirpated, the exposure is made either just below the saphenous opening in the thigh or on the inside of the calf of the leg.

The vein is exposed, grasped with hemostatic forceps, incised and the smaller end of the instrument slipped into the lumen of the vein for the required distance or until some obstruction is encountered. With strong silk the wall of the vein is firmly tied to the shaft of the instrument, the vein ligated, divided between the point of ligature and the instrument, and the hemostatic forceps removed. The smaller bulbous tip of the instrument, which may be seen and felt beneath the skin, is now exposed by incising the overlying skin and wall of the vein, grasped, and by firm traction combined with a series of short jerks the instrument with the affixed segment of vein is extracted. The wall of the vein slips to the other end of the instrument and becomes firmly pleated in a small fusiform mass against the concavity of larger tip of the instrument. The venous branches are torn off from one to several centimeters distant from the main trunk and do not give rise to troublesome hemorrhage. The procedure may be repeated with other varicose veins as desired. Finally the short incisions are closed. The instrument may be introduced into the vein from above downward or from below upward whichever is the more convenient in the particular case. By this instrument one may often remove, through two incisions, one measuring about one inch or less and the other one-half inch in length, twenty or more inches of vein within a very few minutes.

A modified extractor for the removal of varicose veins.

The instrument shown in the illustration is jointed; the joint is, however, not an indispensable feature of the device.

2033 Walnut Street.

1. New York Med. Jour., July 27, 1907.

Special Article

TYPHOID FEVER IN MILWAUKEE AND THE WATER SUPPLY

[*By Our Special Commissioner*]

Typhoid fever seems always to have prevailed more or less extensively in Milwaukee. The following table gives the total number of deaths from this disease, and the corresponding typhoid death rates for the years 1869 to 1909 inclusive.

TABLE 1.—TYPHOID DEATH-RATES, MILWAUKEE. 1869-1910

Year.	Population.*	No. Deaths.†	Deaths Per 100,000 Population.‡
1869	68,820	44	61.0
1870	71,440	58	81.2
1871	75,854	35	46.2
1872	80,269	70	87.2
1873	84,684	49	57.9
1874	89,098	69	77.4
1875	95,513	25	26.2
1876	97,927	36	36.7
1877	102,341	36	35.2
1878	106,755	25	23.4
1879	111,169	32	28.8
1880	115,587	43	37.2
1881	124,475	59	47.4
1882	133,363	42	31.5
1883	142,251	35	24.6
1884	151,139	47	31.1
1885	160,027	44	27.5
1886	168,915	51	30.2
1887	177,803	55	30.9
1888	186,691	78	41.8
1889	195,579	55	28.1
1890	204,468	83	40.6
1891	212,553	71	33.4
1892	220,638	66	29.9
1893	228,720	80	34.9
1894	236,808	60	25.3
1895	244,893	63	25.7
1896	252,978	46	18.2
1897	261,063	31	11.8
1898	269,148	46	17.1
1899	277,233	47	17.1
1900	285,315	59	16.9
1901	290,494	63	21.7
1902	295,673	48	15.1
1903	300,852	54	16.8
1904	306,031	43	13.6
1905	311,210	68	22.9
1906	316,989	98	30.5
1907	322,168	89	25.7
1908	327,347	55	16.8
1909	332,526	78	23.4
1910	337,117	..	....

* Population of 1870, 1880, 1890, 1900, U. S. Census; 1910, U. S. Census Bureau estimate. Intervening years calculated by "arithmetical" method (Twelfth Census Bull. No. 135).

† Number of typhoid deaths recorded in Reports of Health Department.

‡ Rates computed directly from populations and typhoid deaths given in this paper.

By five-year periods the rates are as follows:

TABLE 2.—AVERAGE TYPHOID DEATH-RATES BY 5-YEAR PERIODS

1870-4	70.0	1890-4	32.8
1875-9	30.1	1895-9	17.4
1880-4	34.4	1900-4	17.3
1885-9	31.7	1905-9	24.0

COMPARISON WITH OTHER CITIES

From these data it appears that, in comparison with other American cities of similar rank, the average typhoid death rate in Milwaukee in recent years has not been remarkably high. During 1898-1908, it averaged 19.7. This figure would cause it to be placed eleventh in point of typhoid fatality among American cities of over 100,000 population (census of 1900). Ten cities had a lower average typhoid death rate than Milwaukee during this period and 27 a higher.[1] At the same time a death rate of 19.7 cannot be regarded as remarkably low. The typhoid rate of German cities with a population of over 15,000 (a total population of 19,127,096) averaged in 1902-4 only 6.7. The city of Madison, situated less than 100 miles from Milwaukee, reported an average typhoid rate of 5.8 for the years 1900-8. The average typhoid rate in Chicago for six years, 1904-9, was 16.7; in Milwaukee for the same period, 22. Milwaukee itself is in a region of the country having comparatively little typhoid fever. The typhoid rate for the whole state of Wisconsin—a registration state—for 1908 was 13.9, only Rhode Island among the registration states having a lower rate (12.9).[2]

WATER SUPPLY

The water supply[3] of Milwaukee was first obtained from springs and wells, and from the three streams—now open sewers—passing through the town. A town pump was in existence in City Hall Square as late as 1875. In 1870-71 authority was given the city by the state legislature to issue water works bonds; in 1871 a board of water commissioners was created. The supply was at first taken from Lake Michigan through a 36-inch cast iron pipe laid in the bottom of the lake, extending 2,100 feet from the shore to a crib. The pumps on the lake shore were started Sept. 14, 1874, but for about a year before this date (Nov. 3, 1873—Sept. 14, 1874) water from the Milwaukee River was pumped into the reservoir as a temporary supply for the fire department.

The depth of water at the original intake was eighteen feet, the inflow being eight feet below the surface. This served as the source of water supply up to 1895, when a new intake was completed. The old intake is still connected with the works as a reserve in case of emergency, but is said not to have been used since the above date.

The present intake consists of a brick tunnel, seven and one-half feet inside diameter, extending 3,200 feet to a crib, from which point two lines of cast iron pipe, five feet in diameter, extend 5,000 feet to submerged cribs in sixty feet of water. The inflow is situated about fifteen feet above the lake bottom. The total length of the intake is about 8,200 feet.

From the pumping station on the lake shore which has a daily pumping capacity of 86,000,000 gallons, the water is pumped to a distributing reservoir, with a capacity of 21,000,000 gallons, and to two high service stations.

The sewage of Milwaukee passes for the most part into the three rivers which intersect the city, the Milwaukee river, the Menomonee river, and the Kinnickinnic river. (See diagram.) A slow current sets toward the harbor mouth. The stench arising from these open sewers has caused flushing of the streams to be undertaken as a remedial measure. Two flushing tunnels have been constructed; one in connection with the Milwaukee river; the other, completed in 1907, in

1. For data see Taylor: Engineering News, April 21, 1910.
2. Bureau of Census Mortality Statistics, 1908.
3. The data here set forth are chiefly taken from a historical description by Mr. Thomas McMillan, chief engineer of the pumping station, kindly furnished by Dr. W. C. Rucker.

connection with the Kinnickinnic river. In 1909 the Milwaukee River Flushing Works displaced over fifteen billion cubic feet, the Kinnickinnic river works over twelve billion. The effect is of course to hasten the flow toward the lake. In addition to the sewage entering the lake from this source, an intercepting sewer runs to the north end of Jones Island, just south of the harbor, and at this point fresh, crude sewage is pumped into the lake at a rate of over 55,000,000 gallons daily. (See diagram). The point where the sewage-laden river together with the pumped sewage, enters the lake is about three and one-half miles southwest of the water intake. No city sewers empty into the lake north of the harbor mouth. Some drainage from summer resorts and isolated houses enters the lake at various points north of the water intake, but the volume of such drainage appears to be very small.

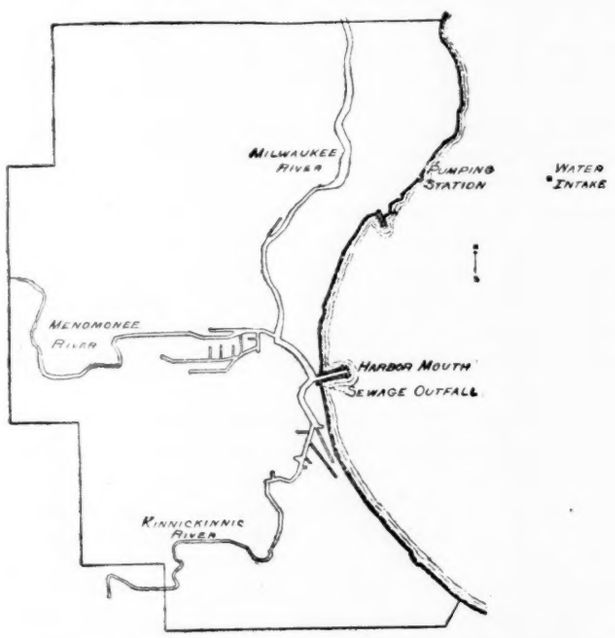

Diagram showing sewage outfalls and water intake, Milwaukee, Wis.

The possibility that some of the Milwaukee sewage may drift north and mingle with the water drawn at the intake is one that must be ever reckoned with. It has been sometimes held that on this—the west—side of Lake Michigan, the general direction of the lake currents is from north to south, but it is plain that there can be no absolute constancy in this respect. The direction and force of the wind, the fluctuation in lake levels and temperature, and other factors must to a greater or less extent affect both the surface drift and the deeper lake currents. Major W. V. Judson, of the United States Corps of Engineers, in a recent paper[4] on "Currents in Lake Michigan," expresses very forcibly this view of the irregularity of Lake Michigan currents.

> We do know, and perhaps it is enough for the purposes of this commission, that occasionally currents of considerable velocity, say several miles per hour, may be expected to arrive from almost any direction at any point reasonably near either shore of the lake. It is therefore apparent that in the general case if the waters of the lake are polluted by the discharge into it of large quantities of sewage, then practicable localities in the lake, even twenty to thirty miles distant from the point of entrance of the sewage, are not safe places from which to derive water for domestic use.

A similar view has been well expressed by Amyot.[5]

> In the neighborhood of our cities it has frequently been observed that with favoring winds streams of unchanged sewage, like the Gulf Stream, wend their way out from shore as much as three or four miles. The winds are very inconstant in direction in these lakes, so that these streams may be easily blown up or down shore. Winds up or down the lake, lasting any length of time, cause piling up of the water. When this finds its level, currents of inconstant direction start up or down the lake.

Even a rather deep intake under these conditions is exposed to pollution, since a wind blowing in-shore may cause a heaping up of contaminated surface water, which then flows outward in a deep countercurrent. Several physical agents may be concerned in bringing about a pollution of the water supply, and it is hardly to be anticipated that as a rule meteorologic conditions will show an unmistakable relation with typhoid fever outbreaks.

Apart from the probability, on these grounds, that at times Milwaukee sewage must to a greater or less extent enter the water supply, there is direct analytical evidence that such pollution actually occurs. Dr. G. A. Bading, former commissioner of health, in a communication to the city council in August, 1908, wrote: ".... analysis, both chemical and bacteriologic, made at regular intervals, unquestionably demonstrates the presence of contamination." The report of Dr. G. C. Ruhland,[6] city bacteriologist, included in Dr. Bading's paper, states that "I have repeatedly found undoubted colon contamination."

REASONS FOR BELIEVING TYPHOID FEVER IN MILWAUKEE IN PART WATER BORNE

As already pointed out, the typhoid rate in Milwaukee ranges in general somewhat higher than that of neighboring cities (Madison, Chicago) possessing a pure or slightly polluted water supply. Although the state of Wisconsin contains some cities with a very high typhoid rate (1908: Eau Claire, 51.4; Kenosha, 58.2; Sheboygan, 97.3), the typhoid rate for the state as a whole was in 1908 considerably below the Milwaukee average. In a word, the general conditions of the region, wherever special water pollution does not exist, are accompanied by a lower typhoid rate than that occurring in Milwaukee.

At first the use of the lake water was followed by a sharp reduction in the amount of typhoid fever. The first year of use of the public supply (1875) was marked by a typhoid rate less than one-half the preceding five-year average. The lake water itself, however, was not guiltless as shown by further developments. Examination of the annual typhoid rate (Table 1) shows a period of irregular and rather high mortality up to 1895. In the next five-year period, a much lower mortality is observed. It must be noted that in 1895 the new water tunnel was completed, thus shifting the intake about

4. First Report of the Lake Michigan Water Commission, 1909, p. 63.

5. Am. Jour. Pub. Hyg., 1909, 19, p. 43.

6. Bading, G. A.: Water Conditions of Milwaukee, First Report of the Lake Michigan Water Commission, 1909, p. 36.

6,000 feet farther out into the lake. It is a justifiable conclusion that the purer water thus obtained was responsible for the lowering of the typhoid death rate. The influence of the water supply in producing typhoid fever is here shown in a striking way.

For a list of typhoid deaths 1890 to 1910, tabulated by months (Table 3), we are indebted to Dr. W. C. Rucker, Health Commissioner of Milwaukee. This table shows, in addition to the regular autumnal incidence, several periods of unusually high mortality. These may be noted especially in December, 1904 and January, 1905; in May, 1905; in March-April, 1906; in December, 1906, and January-February, 1907; and in March-April, 1909. Now this tendency toward excessive prevalence in winter and spring is precisely similar to what was observed in Chicago[7] prior to the opening of the Chicago Drainage Canal. Attention may especially be directed to the spring and winter epidemics of 1890, 1891, 1892, and 1896 in Chicago. At the time these occurred the situation in that city as regards water supply was substantially identical with that now existing in Milwaukee, namely a supply derived from Lake Michigan without purification and from the harbor dangerously near the intake, and this may sometime easily threaten the purity of the water supply.

In 1905 a definite outbreak of the disease was attributed to water pollution:

> A large number of cases of intestinal infection and a considerable number of cases of typhoid fever occurring during the month of May [Table 3] led to exhaustive chemical and bacteriologic examination of the water. . . . It is supposed that the heavy rains which occurred during April carried a large quantity of sewage into the lake. . . . In conjunction with this . . . we had for some weeks almost constantly southwest winds which facilitated the transfer of this sewage to the intake.

The bacterial examination of the water has shown unmistakable, although not as a rule extreme pollution, as stated by Dr. Ruhland, city bacteriologist, in the reports just cited.

From all these converging lines of evidence, environmental, epidemiologic, and analytical, there can be little doubt that at least a considerable proportion of the typhoid fever occurring in Milwaukee during a long series of years must be attributed to a polluted public water supply.

TABLE 3.—DEATHS BY MONTHS FROM TYPHOID, 1890-1910.

Year.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Totals.
1890	8	6	4	3	8	6	4	8	20	3	8	5	83
1891	7	4	6	6	4	3	5	7	3	11	4	11	71
1892	17	6	4	4	..	8	5	3	10	6	6	3	66
1893	7	2	1	5	6	6	5	7	10	13	11	7	80
1894	7	7	4	6	..	4	3	3	5	9	5	7	60
1895	9	2	5	6	3	4	2	4	7	7	7	7	63
1896	6	7	3	5	1	2	3	4	2	5	4	4	46
1897	6	1	3	6	2	..	3	2	2	2	2	2	31
1898	6	1	1	2	6	3	7	2	7	4	4	3	46
1899	2	2	2	1	4	6	3	4	5	10	4	4	47
1900	5	..	2	2	3	6	3	6	11	11	7	3	59
1901	3	3	4	5	8	5	10	6	5	6	5	3	63
1902	3	3	4	1	..	1	3	8	5	8	7	5	48
1903	7	6	3	7	4	2	2	4	6	6	4	4	54
1904	5	1	5	1	6	4	1	3	..	3	3	11	43
1905	10	6	5	8	15	3	..	3	8	7	4	6	68
1906	10	5	14	12	4	6	4	8	7	8	8	12	98
1907	16	13	7	6	4	3	5	7	8	8	5	2	84
1908	4	6	2	3	4	7	3	4	2	9	2	9	55
1909	8	6	10	11	4	4	3	7	7	4	9	5	78
1910	22	14	18	12	19	27	..	..	..	..	..	..	..

exposed to pollution with considerable amounts of raw sewage at irregular and varying intervals. There is also the same general history of typhoid fever in the two cities. Extension of the water intake in Chicago was as a rule followed by a period of relative freedom, and then with the continued growth of the city the disease again became prevalent.

There is evidence that the real nature of the situation has for some time been recognized by the health authorities of Milwaukee. The commissioner of health in 1899 (Dr. F. M. Schulz) wrote in the twenty-third annual report:

> Although the city at present possesses a good water supply, notwithstanding the fact that we are discharging about 60,000,000 gallons of sewage into the lake daily, it is only a question of time when, through the natural increase and growth of the city, the amount of sewage swept out into the lake will assume such proportions as to affect seriously the potability of our water.

And again in 1904 (28th Annual Report):

> While the supply of our city is under ordinary circumstances very satisfactory, every southerly and southeasterly wind would seem to carry a certain amount of contamination

7. Jordan, E. O.: Typhoid Fever and Water Supply in Chicago, THE JOURNAL A. M. A., Dec. 20, 1902.

OTHER POSSIBLE SOURCES OF INFECTION

No one can suppose that in a city the size of Milwaukee water is the only medium of infection. In Washington, D. C., the typhoid rate averaged about 40 in the years 1906-8, and there is no reason to suppose that the public water supply played a large part, if any, in the spread of the infection. It is possible that some at present unknown mode of spread in both Washington and Milwaukee is responsible for the greater part of the typhoid fever cases, but until other possibilities are exhausted we are not justified in resorting to this assumption. Well-known possible sources of infection are milk-supply, contact with typhoid cases and with typhoid bacillus carriers, raw fruit and vegetables, and fly contamination.

These possibilities may be briefly considered, although it is plain that prolonged and intensive investigation of the local conditions would be necessary before a decided opinion could be expressed as to the weight to be given the several factors. Inspection of Table 3 shows that during the last twenty years typhoid fever has occurred frequently at times of year when the agency of the house fly could be excluded. The present outbreak furnishes a case in point. The large amount of typhoid

TABLE 4.—CASES AND DEATHS FROM TYPHOID IN MILWAUKEE, BY WEEKS—JAN. 1 TO JULY 1, 1910, INC.†

Week Ending.	Cases.	Deaths.	Week Ending.	Cases.	Deaths.
Jan. 1*	29	3	April 9	48	2
Jan. 8	67	3	April 16	29	4
Jan. 15	43	3	April 23	30	4
Jan. 22	45	8	April 30	38	3
Jan. 29	27	4	May 7	33	..
Feb. 6	28	1	May 14	22	3
Feb. 12	31	4	May 21	23	11
Feb. 19	27	1	May 28	86	1
Feb. 26	55	5	June 4‡	112	9
March 5	49	9	June 11	91	7
March 12	72	3	June 18	61	2
March 26	23	2	June 25	47	9
April 2	45	6	July 1 (6 days)	29	4

Total number of cases to date, 1,063.
Total number of deaths to date, 114. Out of city, 2.

* The week ending January 1st includes six days of 1909.

† Dr. G. C. Bading was health commissioner up to May 23, at which date he was succeeded by Dr. W. C. Rucker.

‡ Whipple states that "when an epidemic occurs physicians are more likely to report cases of typhoid fever than at other times when there is no excitement." (Whipple: Typhoid Fever, New York, 1908, p. 99.) "We are inclined to believe, from our observation of the situation [in Washington] and from experimental data, that perhaps from 10 to 20 per cent. of the cases reported as typhoid fever are really some other disease," Rosenau, Lumsden and Kastle: Bull. No. 52, U. S. P. H. and M.-H. Service, 1909.

tion than should be assigned to it in the neighboring city of Chicago where, during the past six years, the typhoid fever rate has been considerably lower than in Milwaukee (Chicago, 16.7, Milwaukee 22).

In regard to possible contamination of fruits and vegetables, it may be remembered that this is especially liable to occur when the contents of privy vaults are used by market gardeners. We have no means of knowing the extent to which such a practice prevails on the truck farms in the neighborhood of Milwaukee, but the distribution of cases in time and space does not suggest that this can be one of the main factors.

The milk supply of Milwaukee, as already indicated, does not come from a region where there is a particularly high typhoid mortality. In the present outbreak there is not the disproportionate mortality among children that usually accompanies milk-borne epidemics. The records of the health department show that in the present outbreak there is no special incidence of the disease

TABLE 5.—MONTHLY PRECIPITATION BY INCHES, MILWAUKEE*

	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1871	3.55	1.38	3.16	3.27	3.24	3.17	1.67	3.70	0.57	3.37	2.54	1.93
1872	0.90	0.34	0.53	1.84	3.11	3.67	2.05	1.89	8.72	0.73	1.99	0.49
1873	2.81	0.17	1.22	2.28	5.17	2.88	2.69	4.03	2.89	1.96	1.72	2.81
1874	3.46	0.66	2.54	2.02	3.00	3.40	3.86	1.79	4.51	1.90	2.69	1.00
1875	1.24	1.82	2.93	3.13	5.06	4.23	3.18	2.52	4.31	2.87	1.16	3.11
1876	4.39	3.63	5.29	2.83	8.54	4.76	4.39	5.52	3.66	1.62	3.57	2.16
1877	2.83	0.10	5.53	6.99	0.74	5.76	2.06	6.31	0.48	7.15	4.95	3.25
1878	1.80	3.10	3.89	5.83	4.96	4.88	2.94	0.64	4.03	4.13	1.01	1.08
1879	0.51	1.62	0.92	2.04	2.29	2.66	3.39	1.87	2.00	2.01	3.66	1.76
1880	2.17	1.69	1.16	4.22	3.13	6.93	3.20	3.54	1.85	0.51	0.82	0.74
1881	1.86	5.39	5.30	0.78	2.55	3.77	5.34	0.80	4.28	6.04	1.69	1.27
1882	1.05	2.11	3.90	1.92	2.03	3.77	1.58	4.21	1.31	2.83	2.05	1.67
1883	1.66	2.64	0.28	0.86	5.67	2.84	7.13	0.38	2.32	1.92	1.81	1.96
1884	1.69	2.61	2.77	3.15	1.67	4.22	3.80	1.84	2.82	2.18	1.45	2.37
1885	1.10	0.49	0.21	2.32	0.41	6.49	4.23	7.39	3.30	2.40	1.53	2.71
1886	5.02	2.36	3.42	2.77	2.67	2.54	0.94	3.40	2.38	2.31	1.62	2.03
1887	2.66	3.22	1.25	1.05	1.80	0.81	5.21	2.25	4.36	2.43	0.85	4.57
1888	1.41	1.08	2.25	2.34	2.21	2.90	3.48	2.21	0.99	1.18	1.46	1.97
1889	1.95	2.00	1.07	2.40	5.64	5.21	3.08	0.76	3.45	0.56	2.71	2.87
1890	2.51	1.94	2.68	2.84	4.95	4.09	1.77	3.18	0.65	2.96	2.02	0.50
1891	2.10	1.67	3.17	3.27	1.47	4.98	3.57	2.83	0.18	1.66	3.40	1.46
1892	2.29	1.76	1.76	2.78	8.12	6.33	1.20	3.47	2.21	1.66	1.84	1.61
1893	1.80	1.51	3.29	5.69	1.79	5.46	3.67	1.01	3.24	1.62	1.20	2.59
1894	1.64	1.63	2.53	2.89	4.66	3.44	1.08	0.29	5.06	2.05	1.68	0.84
1895	1.78	1.26	0.74	1.48	4.24	3.04	1.58	2.83	1.82	0.52	2.99	2.60
1896	1.22	1.36	2.82	3.85	3.31	2.03	2.64	1.77	5.72	1.02	2.48	0.76
1897	3.86	1.78	4.83	4.21	1.01	3.21	2.33	3.00	1.48	1.05	1.87	2.42
1898	3.52	3.36	3.45	1.77	1.65	2.44	3.28	4.86	1.98	4.38	1.16	0.58
1899	0.45	0.75	1.99	0.68	3.42	2.29	2.56	2.54	3.04	1.21	1.64	2.25
1900	1.63	3.05	1.72	1.74	2.57	1.88	4.93	3.76	3.51	2.22	2.25	0.84
1901	1.33	1.92	3.62	0.47	1.75	1.12	1.45	1.50	1.86	0.65	0.75	1.69
1902	0.51	1.13	1.91	0.67	4.60	4.71	4.82	0.53	4.27	1.81	1.85	1.82
1903	0.60	2.01	3.20	2.68	3.03	1.51	4.53	5.56	5.02	2.13	1.40	1.65
1904	1.36	1.39	5.46	1.79	2.38	3.65	1.89	3.96	2.64	2.56	0.11	2.67
1905	1.62	2.33	3.00	2.00	6.50	3.89	2.52	3.18	0.76	3.59	1.34	1.46
1906	2.76	1.92	1.62	2.04	2.95	2.57	2.14	3.87	4.08	2.05	2.79	1.39
1907	2.54	0.39	2.92	3.41	3.14	4.48	5.89	2.88	5.39	0.78	0.85	2.23
1908	3.24	2.87	2.25	3.61	4.55	2.44	2.56	1.63	0.72	1.08	1.87	1.50
1909	2.29	1.99	0.86	7.09	2.27	2.58	1.62	3.18	3.39	0.61	2.29	3.34
1910	2.71	0.58	0.05	3.48	2.64	1.01	....	....	....	....	....	....

* By kindness of the Weather Bureau.

fever in the winter and spring of 1910 could not have been due to fly infection.

We are, however, told by officials of the health department that there are several hundred open privies still in use in the more thinly settled parts of the city and that many hundreds have been abolished during the last three years. The present extensive distribution of cases will render the privies in the coming summer more than ever a source of danger from fly contamination. In the past fly contamination has doubtless played a part in Milwaukee as elsewhere, but to just what extent cannot be determined by any available data. The seasonal and geographic distribution of cases would not seem to justify assigning it a prominent position.

Contact infection in like manner has doubtless occurred and is now occurring in Milwaukee but there seems no reason for attributing to it a larger share in causation among particular milk-routes. There are no data available for determining the relative amount of milk-borne infection in Milwaukee at an earlier period.

THE PRESENT SITUATION

In the current year, 1910, there has been an unusual amount of typhoid fever in Milwaukee. This is shown by the unanimous testimony of physicians, by the fact that there are many more typhoid cases than usual in the hospitals, and by the necessity that has arisen for bringing in additional trained nurses from neighboring cities. On July 1 an appeal was issued by the Associate Charities of Milwaukee for funds to continue the work of the organization. In this appeal it is stated that "The Associated Charities are at this time almost entirely without working funds. The typhoid fever epidemic is mainly responsible for this unusual state of

affairs. In the month of June just past the Associated Charities cared for 350 cases more than ever before in the history of the organization, more than in the panic years, and three times more than last year. Of these, 90 cases were illness, mostly typhoid fever."

The records of the health department show the extent to which the disease has prevailed (Table 4)).

A map has been prepared by the health department, showing the distribution of cases throughout the city. The poorer sections do not seem to have suffered disproportionately. The "spot map" furthermore does not reveal the existence of a number of scattered centers, but rather a uniform distribution, such as would be expected if a common factor such as a public water supply were concerned in the causation. There is nothing in the distribution of cases, so far as has been disclosed, to conflict with the hypothesis that the present rather extensive outbreak owes its origin to the lake water. On the other hand, no explanation for the particularly severe incidence of the disease at the present time has been advanced. The amount of sewage discharged into the lake has not materially increased during the last three years. Comparison of the figures of the monthly rainfall recorded by the weather bureau (Table 5) does not throw much light on the problem. It is tempting to suppose that an unusually heavy rainfall such as occurred in December, 1909 (1.44 in. above average) and April, 1910 (0.78 in. above average) may have produced a particularly extreme water pollution, but on the other hand the much more excessive April rainfall of 1909 (4.39 in. above average) was not followed by unusual typhoid prevalence. From data already given it is plain that not only rainfall but wind direction must influence profoundly the extent of contamination. It is, therefore, perhaps useless to attempt to trace any connection with meteorologic conditions where a concurrence of several factors is necessary to bring about the result and when, given exactly the right conditions, a few hours may be sufficient to produce a serious infection of the water supply. At the same time it is difficult to avoid the suspicion that a heavy rainfall such as occurred in November, 1891, was one of the factors in producing the outbreak of typhoid in the following December and January.

REMEDIAL MEASURES

When the gravity of the existing situation became manifest, warnings to boil the drinking water were issued by the health department and leaflets of instruction were printed in several languages and distributed broadcast. On June 20 a temporary plant for chlorination of the water was put in operation near the pumping station. This was being operated sixteen hours a day on July 1. The analytical results of this procedure are said to be excellent, the tap-water showing marked bacterial improvement.

It is significant that the whole problem of sewage disposal is now and for some time has been under advisement. As the result of a communication to the Common Council by Dr. Bading in 1908 an expert sewage commission, consisting of the well-known sanitary engineers, Messrs. J. W. Alvord, G. C. Whipple, and H P. Eddy, was appointed to devise plans for a system of sewage disposal. This commission has not yet completed its investigation, but a report is expected in the near future. It is thus evident that the whole situation in Milwaukee is on the way to speedy betterment.

SUMMARY AND CONCLUSIONS

The history of typhoid fever in Milwaukee shows first a period of very excessive prevalence, (1869-1874). The introduction of a public water supply improved conditions greatly. This usually happens when shallow wells are abandoned for a large body of water. In spite of the improvement, however, the typhoid rate remained excessively high (over 30) for a period of 20 years. Then in 1895 the water intake was extended 6,000 feet further out into the lake. The result was an immediate drop in the typhoid rate to about one-half. Slowly, however, the growth of the city asserted itself by an increasing volume of sewage poured into the lake and a consequent increased contamination of the water supply. In the present year (1910) the typhoid rate promises to be as high as before the extension of the water intake. No other probable source of a large amount of typhoid fever has been discovered and there can be little if any doubt that the public water supply is responsible for the present outbreak. When millions of gallons of sewage are discharged into a lake a few miles from a water intake it needs no divining rod to detect the possibilities of danger. No fact in epidemiology is more clearly established than that sewage-contaminated drinking-water is a cause of typhoid.

A CASE OF RETROGRADE PUBERTY, IMPOTENCE AND DIABETES INSIPIDUS, RELIEVED BY SUPRARENAL CORTEX

WILLIAM T. BELFIELD, M.D.
CHICAGO

History.—In 1897, H., aged 27, married, developed (1) polyuria without sugar, 120 to 150 ounces daily; (2) retrograde puberty; i. e., atrophy of testes, disappearance of beard, pubic and axillary hair, the scalp hair remaining luxuriant. The condition, called diabetes insipidus by the physicians consulted, had existed for twelve years, when, in 1909, the patient was referred to me.

Diagnosis.—The polyuria and retrograde puberty suggested an excess of pituitary secretion. As an *x*-ray picture of the pituitary region by Dr. Reichmann revealed nothing abnormal, the pituitary excess was assumed to be not absolute, but relative, possibly from deficient secretion by the adrenal cortex.

Treatment.—After thyroid substance, and later adrenalin (which is derived from the adrenal medulla only), had proved futile, he was given daily four grains of suprarenal substance, containing cortex as well as medulla.

Result.—Improvement was prompt and distinct; after four months of this medication his daily urine is only one-half the average during twelve years; beard and body hair have grown markedly; the testes have doubled in size, and coitus has been practiced several times, after twelve years of absolute impotence. In short, he is exhibiting puberty a second time.

As two other cases of retrograde puberty—a type seemingly hitherto unrecognized—have come to my notice, possibly they are not rare.

100 State Street.

SYPHILIS IN INSANITY AS DETERMINED BY THE WASSERMANN REACTION *

C. B. ENSOR, M.D.
BALTIMORE

Of 262 male patients from Mt. Hope Retreat, tested by the Wassermann method, a positive reaction was obtained in 58, or in 22 per cent. of the total male population. Of the 262 patients, a history of syphilis was given in only 3 per cent. of the total, and only 14 per cent. of the patients showing a positive reaction admitted having syphilis, though most of them acknowledged exposure, and having had gonorrhea; 86 per cent. of the patients with positive reactions thus denied having had syphilis at any time. On the other hand, a history of syphilis was admitted where the reaction was negative in 2.6 per cent. of the total admissions. Of the 58 positive cases, 69 per cent. of the patients have been in the institution one year and under, 12 per cent. have been there two years, and 19 per cent. have been there three years and over.

We classify the positive cases as follows:

	PER CENT.
Chronic alcoholic insanity	15.5
Dementia præcox	18.9
Dementia paralytica	17.2
Maniac depressive insanity	15.5
Organic dementia	20.4
Paranoia	3.4
Involutional insanity	6.8
Constitutional insanity	1.7

Of 21 patients from other sources 16 were paretics with a positive reaction in all, and of 27 cases of paresis collected from all sources, 96 per cent. of patients gave a positive reaction. Of 7 cases of tabes 83 per cent. of reactions were positive, and of 5 cases of cerebral syphilis 4 were positive, while in the only negative case the patient had been receiving mercurial injections for the previous six months.

PRELIMINARY NOTE ON THE ACTION OF EHRLICH'S SUBSTANCE 606 ON SPIROCHÆTA PERTENUIS IN ANIMALS†

HENRY J. NICHOLS, M.D.
Captain, Medical Corps, U. S. Army
NEW YORK

The usual treatment of yaws with potassium iodid or mercury is very tedious, but the encouraging results already obtained in the treatment of other diseases due to spirochetes, namely, syphilis, relapsing fever and fowl spirillosis, by a single injection of Ehrlich's substance "606,"[1] suggest that his principle of "therapia magna sterilisans" may be applied also to yaws.

As a preliminary to the use of any new drug on man, its trial on animals is, if possible, of course, strongly indicated on many grounds. Up to the present, the only animal experimentally infected with yaws has been the monkey, various species of which have been infected by Castellani in Ceylon, Ashburn and Craig in the Philippines and Neisser, Halberstadter and Bauerman in Java. A definite lesion results from inoculation, but apparently the reaction is rather superficial, as is indicated by a late weak complement fixation reaction and a relative scarcity of spirochetes.

Recently, I have succeeded in infecting rabbits in the testicle with the spirochetes of yaws and this lesion is an excellent guide to treatment, as the spirochetes are present in myriads in pure culture, the serum reaction is prompt and strong and the organ can easily be removed and examined. Rabbits, also, are, of course, easier to obtain and to handle than monkeys.

The spirochetes came from a colored soldier returning from the Philippines who had a well-marked case of yaws with three separate general eruptions.[2]

A monkey was first infected on the eyebrow and transfers were then made of the serum of the monkey's yaw to rabbits' testicles. Three rabbits of the first generation became infected in an average of forty-one days and the infection was then carried on from rabbit to rabbit. The spirochetes are now in the seventh generation in the rabbit and the incubation period has fallen to about twelve days. A detailed account of this work will appear in the *Journal of Experimental Medicine* in a short time.

The lesion seems to differ only in degree from a syphiloma of the rabbit's testicle and consists of an edematous tumor in the testicle or epididymis, varying in size from that of a pea to that of an olive. On puncture with a capillary pipette and examination of a drop of the serum with the dark-field microscope a brilliant picture is obtained. Levaditi stained sections are equally striking. The lesion persists four to six weeks and the Wassermann reaction occurs in the first or second week. The general health of the animals is not noticeably affected.

Ehrlich's "606" is dichlor-dioxy-diamido-arseno-phenol; it is a golden yellow powder put up in vacuum tubes, and is given in the form of a disodium salt freshly prepared before each injection. This substance has been built up with the idea that it shall have a selective action for spirochetes and thus open the way to sterilize the tissues by a single adequate dose. Up to the present, no toxic effects of the drug itself have been observed[3]. A quantity of the material has been recently sent to the Rockefeller Institute by Professor Ehrlich for trial in syphilis.

The following experiments have been made to determine the action of this substance on animals infected with the spirochetes of yaws.

Rabbit 1.—April 1, inoculated in left testicle with material from Rabbit C (first generation from human case). May 6, nodule palpable, spirochetes present; thirty-six days. May 7, spirochetes present. May 9, nodule size of olive; serum negative; 0.1 c.c. injected intravenously with 0.0045 gm. 606 per kilo. May 10, spirochetes not found. May 12, nodule not palpable. May 21, nodule not palpable. June 3, nodule not palpable. June 16, under ether anesthesia, testicle removed; no lesion; spirochetes not found; serum negative.

Rabbit 15.—March 31, right testicle inoculated from Rabbit 7 (second generation). May 7, nodule palpable, spirochetes

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* From the Laboratories of Dr. C. E. Simon and the Mount Hope Retreat.

† From the Laboratories of the Rockefeller Institute for Medical Research, New York.

1. Ehrlich: Ztschr. f. ärztl. Fortbild., 1909, vi, 721.

2. Nichols: Proc. New York Path. Soc., 1910, x, 1.

3. Alt: München. med. Wchnschr., 1910, lvii, 561; Iversen: München. med. Wchnschr., 1910, lvii, 777.

present; thirty-seven days. May 9, treated as above, intravenously; serum negative; nodule size of olive. May 10, spirochetes not found. May 12, lesion size of pea. May 18, lesion not palpable. May 28, rabbit dead; testicle shows no lesion.

Rabbit 17.—April 14, left testicle inoculated from Rabbit 6 (second generation). May 7, nodule palpable, spirochetes present; twenty-three days. May 9, treated as above, subcutaneously; serum negative; nodule size of pea. May 10, spirochetes not present. May 12, spirochetes not found. May 18, lesion not palpable. June 16, under ether anesthesia, rabbit castrated; no lesion; serum negative.

Rabbit 21.—April 22, right testicle inoculated from Rabbit 9 (third generation). May 14, nodule palpable, spirochetes present; twenty-two days. May 23, serum positive. May 24, spirochetes present; treated as above, intravenously. May 25, spirochetes not found. May 27, serum positive; lesion not palpable. May 31, serum positive. June 14, lesion not palpable; serum positive. June 17, under ether anesthesia, rabbit castrated; no lesion. June 23, serum negative.

In several animals, the serum reaction has persisted a number of days after the removal of the focus of infection.

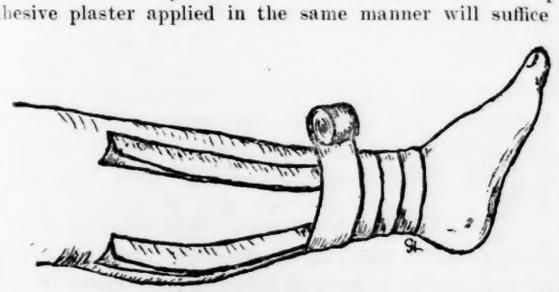
In all these animals no spirochetes could be found twenty-four hours after the treatment; the lesion disappeared after two or three days and, except in the last case, no complement fixation reaction occurred.

In animals not treated, the lesion, as noted above, persists several weeks at least and the serum reaction occurs in one or two weeks. These animals were, therefore, permanently cured by a single small dose. Rabbits tolerate a dose thirty times as great as the one given.

Three monkeys infected on the eyebrow have also been treated in a similar way and the lesions have disappeared after twenty-one days.

It would seem worth while to try this remedy in our tropical possessions where the natives are frequently, and white men are occasionally, infected.

Bandage for Cone-Shaped Surface.—Dr. Maynard C. Harding, Ault, Colo., says: The excellent bandage described by Dr. G. W. Putnam (THE JOURNAL A. M. A., April 30, 1910, p. 1441) prompts me to report a similar method of applying a bandage to any cone-shaped surface. Cut three strips of 2-inch adhesive plaster the length of the completed bandage—two will do for an arm-dressing. Fold them lengthwise with the sticky side out, and apply to the limb at equal intervals. Put on the first layer of roller as usual; then one strip of adhesive plaster applied in the same manner will suffice for each successive layer, making a bandage of exceptional strength and durability. It can be especially recommended for a knee-dressing where it is desired to limit the motion.



A firm bandage for any cone-shaped surface.

One reads much of starch bandages in works on surgery, but they are seldom found in the average office. A very satisfactory substitute can be made with the help of a bottle of thin glue or quickly drying cement. A few dabs of glue on every other layer of bandage as it is applied will convert it into a solid mass. This method can be used to apply further layers to the adhesive bandage described above, or with Dr. Putnam's bandage.

THE RELATION OF MOSQUITOES TO FILARIASIS IN THE REGION OF SAN FRANCISCO BAY*

CREIGHTON WELLMAN, M.D.
EDWARD VON ADELUNG, M.D.
AND
FINLEY M. EASTMAN
OAKLAND, CAL.

The constant presence of filariasis in the cities bordering San Francisco Bay has long rendered it desirable to know if the indigenous mosquitoes of this region are efficient hosts for the parasite at the temperature normally found in this part of California. In other words it is a desideratum to learn if an Oriental infected with filariæ residing, for instance, in Oakland might be a menace to the community in which he lives. With this object in mind we have undertaken some experiments.

REPORT OF EXPERIMENTS

The Source of the Filariæ.—A Japanese man, aged 29, was found on Dec. 10, 1909, to have sharp-tailed, sheathed filarial embryos in his night blood. This man came to San Francisco six years ago from Japan, stopping at Hawaii three months on the way. He went to Alaska four years ago and since his return to California has resided for three years in Oakland.

The Mosquitoes Used in the Experiments.—These were all bred from larvæ collected in rain-water barrels, etc., which on breeding out proved to be two common species already reported from this part of California, namely, *Culex consobrinus* (Rob.-Desv.) and *C. tarsalis* (Coq.). The males soon died in captivity but the females were easily kept alive in gauze cages, protected from bright light and fed on fresh grapes, which they readily sucked.

Time and Manner of Feeding.—The patient's blood was first examined late at night and proved to contain microfilariæ in plenty, and the mosquitoes were then removed from the cage in glass tubes and wide mouthed bottles, care being taken not to injure the insects. These containers were inverted over the flexor surface of the patient's forearm. It was found that some of the mosquitoes fed very slowly, in several instances an hour elapsing between the time the tube was placed on the arm and the mosquito's beginning to suck blood. When the insects had fed to repletion they were transferred to a cage containing a dish of water and kept at the ordinary temperature of the laboratory with some protection from the light. On the seventh, fourteenth and twenty-first days, after feeding, part of the mosquitoes were dropped alive into 80 per cent. alcohol, an equal number of controls which had fed only on fruit being treated in the same manner each time, and the bottles carefully labeled. To prevent error, two lots of mosquitoes were fed and controlled after this method, the dates of the first feeding of the two lots being December, 1909, and January, 1910, respectively.

Technic Employed in Preparing the Mosquitoes.—This may be described under two heads, namely, (1) fixing and hardening of mosquitoes, and (2) staining and mounting.

Under the first head it will be remembered that the insects had been dropped alive in 80 per cent. alcohol. They were removed from this and the legs and wings cut off. Next they were placed in 95 per cent. ethyl alcohol for twenty-four hours. From this they were transferred to absolute alcohol for twenty-four hours. From absolute alcohol they were put in absolute alcohol and ether (equal parts) for twenty-four hours. From this mixture they were transferred to ether for twelve hours. From the ether they were placed in 3 per cent. celloidin for three days and afterward into 6 per cent. celloidin

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* From the Laboratory of Tropical Medicine, Oakland College of Medicine.

* Published under the *imprimatur* of the American Society of Tropical Medicine.

and placed in 80 per cent. alcohol to harden for twelve hours. The specimens were then sectioned and the sections kept in 80 per cent. alcohol previous to staining.

Under the second head we may record the following steps. The sections were taken from the alcohol and placed in tap-water to remove the alcohol. Next they were stained with Delafield's hematoxylin for two minutes and afterwards washed in tap-water to remove surplus of stain. Acid alcohol (95 per cent. ethyl alcohol with 1 per cent. hydrochloric acid) was used to differentiate the sections, the sections being placed for three minutes in this mixture. Next the specimens were placed in 95 per cent. alcohol for three minutes to dehydrate. The sections next were passed through beechwood creosote for five minutes to clear them and finally fixed on slides and mounted in xylol balsam under cover glasses.

Result of Examination.—No developmental forms or other extraneous bodies were seen in the thoracic muscles or any other part of the sectioned mosquitoes. The appearance of the mosquitoes fed on the patient's blood is identical with that of the mosquitoes used for controls. As the sections are thin and the staining good, and as Dr. Wellman is familiar with the appearance of developmental forms of filariæ there seems to be little room for mistake.

Conclusions.—We consider that we have shown by this experiment that the two commonest species of Culex mosquitoes in Oakland are not efficient hosts at room temperature for the nocturnal sheathed microfilariæ occurring in our Japanese patient. It is possibly not too much to say, in view of these findings, that there is probably little danger that Orientals who are infected with filariæ will infect the inhabitants of the San Francisco Bay cities under present conditions.

1068 Broadway.

Therapeutics

ULCER OF THE STOMACH AND DUODENUM

It is the object of this department not only to present sensible treatment for disease and to suggest a method of carrying out that treatment, but also to aid the clinician in making his diagnosis and hence to establish the correct treatment.

Besides gall-bladder disturbances and recurrent appendicitis which all give epigastric symptoms, and other reflexes from abdominal disease or conditions, ulcer of the stomach and duodenum must be diagnosed from the neurosis, gastralgia, and from cancer of the stomach.

ULCER OF THE STOMACH

The principal symptoms are pain and vomiting. The pain is circumscribed and boring in character, sometimes shooting through to the back, intermittent, mostly after eating, rarely on an empty stomach, and is increased by pressure, as by corsets, bands, and belts. The greatest intensity of the pain is located somewhere in the stomach region. The vomiting is likely to occur immediately or soon after eating, and is often projectile in character. The vomiting of blood is, of course, highly distinctive, but does not always occur, and the blood may be fresh and arterial or more or less coagulated and partially digested and rarely of the coffee-ground variety. The appetite is generally good, especially for meat. There is often thirst; pyrosis and flatulence, rarely; there is generally hyperchlorhydria, and meat is thoroughly digested. Attacks of diarrhea are likely to occur, and the stools often contain occult blood. There may develop anemia, more or less severe.

ULCER OF THE DUODENUM

The principal symptom is pain, more or less localized in the region of the pylorus, intermittent, occurring generally about two hours after a meal. In other words, this pain occurs when the stomach is more or less empty. This pain is more frequently relieved by eating some bland food or drinking milk than is the pain of ulcer of the stomach. The appetite is generally good, and vomiting and other symptoms of gastric indigestion are infrequent. Attacks of diarrhea may occur, and occult blood is often present in the stools. There may be a marked hyperchlorhydria.

GASTRALGIA

Gastralgia or stomach cramp may be a neurosis, or may be caused by any irritant in the stomach. While severe gastralgia may cause cardiac depression and simulate angina pectoris, it most frequently allows a prognosis of perfect safety to the patient, and occurs generally in a neurotic patient or hysterical woman. The pain is never so severe as these patients think it is, is often entirely relieved by eating, and is accomplished by enormous amounts of eructated, odorless gas. Burning is often complained of, but pyrosis rarely occurs. Digestion is generally found good when tested. Burning pain and gas eructations are irrespective of the kind of food eaten. The appetite is, of course, capricious and the pain is generally relieved by food and pressure, in fact, pressure is well borne. Nausea and vomiting are rare.

CANCER OF THE STOMACH

The above three conditions may occur at any age, but more generally before 35, while cancer of the stomach occurs more generally from 40 to 60. The principal symptom is pain, generally localized, often in a region that is felt to be a mass or tumor which is exquisitely sensitive to pressure. The pain progressively becomes worse; the mass progressively grows, and emaciation and cachexia progressively increase; hence a patient who has upper abdominal pain of a duration of much more than six months, without presenting any appearance of cachexia and without having lost much weight, can be almost guaranteed not to have cancer. Other symptoms of cancer of the stomach are loss of appetite, eructations of fetid gas, pyrosis, often repeated vomiting, sometimes days at a time and then a period of rest, with frequently, of course, signs of dilatation of the stomach. Rarely is fresh blood vomited; generally extravasations of blood remain long enough in the stomach for decomposition and when vomited give the appearance of coffee grounds. The stomach poorly digests food, often contains no free hydrochloric acid after a test meal, generally lactic acid, and, if the cancer is near the pylorus, the Boas-Oppler bacillus.

A TEST FOR BLOOD IN THE FECES

Many cases of gastric and duodenal ulcer can only be diagnosed by the symptoms of these conditions plus the finding of occult blood in the feces. A small portion of fecal matter about the size of a hazelnut is mixed with water, and to this watery mixture is added a small quantity of glacial acetic acid. This is then placed in a test tube and shaken with ether. Any hemoglobin which may be present is changed to hematin by the acetic acid and taken up by the ether. After settling, the ether which rises to the top of the solution is poured off and to it a solution of guaiac in alcohol is added. To this is added 1 c.c. (15 minims) of the resin of turpentine. The change of color denotes whether blood is present or not. If blood is present in any amount it quickly

changes to blue. If there is but a small quantity of blood the change requires some minutes. Before applying this test there should be no meat allowed in the diet for forty-eight hours, to preclude the possibility of the blood test being given by the eating of a meat which contained blood.

TREATMENT

While it is wise, and will be found wise, to operate more frequently for gastric and duodenal ulcer than has been done, the seriousness of the operation is such that every effort should be made to cure the condition medically. The greatest danger from these ulcers causing serious hemorrhage is in their early history, and probably it is at this time that they are most amenable to medical treatment. It is not frequent for patients to die from hemorrhage from an ulcer in these regions, but the fact that it does occur, and the fact that perforation may occur, and the fact that constant hemorrhages may cause profound anemia, makes the condition serious from the very beginning. Again, these ulcers so frequently become quiescent or apparently heal only to cause symptoms later, that it is hardly safe to decide that an ulcer in the region is cured until after the lapse of at least a year, and perhaps two years, of freedom from symptoms.

In attempting to cure an ulcer of the stomach or duodenum the diet becomes of primary importance, as it is the food that is continuously to aggravate the condition. As hyperacidity seems to increase the ulceration, certainly increases the pain, and is likely to increase the vomiting, anything that diminishes the acidity is good treatment, and a diet free from the substances that cause the greatest outpouring of hydrochloric acid is the diet of choice. In other words, a diet without meat and without meat broths, without toast, and without any hard particles of food that can scrape or irritate the inflamed part, should be selected. On the other hand, it does not always seem that a large, straight milk diet, with the probable production of lactic acid and gas during its digestion, is advisable or beneficial. Neither does it seem sensible to prescribe a starvation diet or a total abstinence from food, with rectal feeding which is always insufficient, to cure an ulceration that at the best must require weeks to heal, and this in a patient who is already debilitated and probably anemic. Therefore, the so-called Lenhartz diet with raw eggs is the most sensible as giving nutrition and at the same time inhibiting the production of hydrochloric acid and tending to heal the ulcer.

The raw eggs are beaten up whole and placed in a cup or glass surrounded by ice. The small amount of milk given is also served iced in the same manner, and the egg and milk feedings alternate with each other every two hours, at first two teaspoonfuls of the egg and four teaspoonfuls of the milk. The first day two eggs are used and six ounces of milk. The eggs and milk are gradually increased from this minimum until by the sixth day seven eggs and twenty-two ounces of milk are given. From the third day on a little granulated sugar is added. At the end of a week the number of eggs is reduced and some scraped beef is allowed, with soon a small amount of boiled rice. During the following week, the second week, the eggs may be soft boiled, and four may be administered a day, with the milk increased to nearly a quart, sugar as before, and scraped beef or chopped chicken and rice or bread with a little butter may be gradually added and the diet thus varied. Even when the eggs are used soft boiled, four should be taken a day. Whatever is taken, if solid, it should be very completely and slowly masticated, and as above stated, at first the amounts ingested at one time must be very small and taken at intervals of two hours during the day. The foods for the first week should be taken cold and the next week only warm, never hot. Small sips of iced water may be taken as often as desired or advisable.

During the first week the patient should be fed, not even allowed to feed himself, and he should remain in bed for at least three and better four weeks.

If there is hemorrhage, an ice-bag should be placed over the stomach and a large dose of bismuth subnitrate should be administered, perhaps 3 or 4 grams (45 or 60 grains) at once.

It generally seems advisable to give bismuth in large doses, at least 2 grams (30 grains) once a day. This can be taken stirred up in water or in milk and quickly drunk.

The treatment above suggested generally stops the pain. If pain is still severe morphin should be resorted to, but with this treatment it rarely will be necessary, and the dose required, hypodermatically, is small.

The patient should not get up to urinate or for the bowels; a bedpan should be used. If the patient is constipated, the bowels may be moved by the rectal injection of a half ounce to an ounce of glycerin with an equal amount of water, and soap suds could be used if needed.

As these patients are already short on iron and for a number of days are to receive no meat, it is advisable to give the saccharated oxid of iron (*Eisenzucker*), 3 grains, in tablet form, twice a day. The patient should thoroughly crush the tablet with the teeth before swallowing.

If after a month of this treatment the patient cannot normally convalesce and be apparently cured, in other words, if the symptoms quickly return, an operation should probably be recommended, as the future of such a recurrent case is uncertain. Recurrent severe hemorrhage should cause operation, and, of course, when there is perforation operation is immediately necessary.

FACIAL SPASM AND TIC; TORTICOLLIS

The general practitioner may as well in the first place admit that there is a scientific, psychopathic method of treating patients suffering from nervous mistakes, and in the second place, that such treatment can be carried out successfully only by physicians who have made this branch of therapy a special study.

These points being agreed on, it is most satisfactory to note that Dr. Tom A. Williams, of Washington, D.C., declares (*Monthly Cyclopedia and Medical Bulletin*, January, 1910) that many of the supposed incurable and most distressing spasms of the face and neck muscles may be cured. In this paper he ably and carefully discusses the diagnosis of the above conditions from chorea and from the more serious cerebral disturbances. He cites a number of illuminating cases, but does not go into the technic of treatment. If he did, it would hardly be of value to the general practitioner, as if the above preamble is correct and agreed to, patients suffering from these muscle contractions, terrible to themselves, distressing to their friends, and causing moral suffering almost beyond measure, should be referred to a physician who has made a special study of psychopathic treatment.

The object of this reference is to call the attention of physicians to the fact that in many of these supposedly hopeless cases a cure may be effected.

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[*For other information see second page following reading matter*]

SATURDAY, JULY 16, 1910

MEDICAL MEN WIN RANK IN THE ARMY

Major-General Leonard Wood has returned from South America and this week assumes his duties as the senior general officer of the United States Army. Next in rank is Adjutant-General Fred C. Ainsworth. Both are medical men who entered the army as surgeons. That they should have been able to break through the conservatism of military administration, and to advance so far into fields usually closed to their profession, is to the credit not only of their abilities and force of character, but of the Army itself, which has demonstrated its ability to rise above ancient prejudices and traditions and to utilize its best material. That the Medical Corps should contribute at the same time the senior line officer and the senior officer of the staff is an event sufficiently remarkable to call for more than passing notice.

General Leonard Wood was born at Winchester, N. H., Oct. 9, 1860, and graduated from Harvard Medical School in 1884. In January, 1886, he entered the Medical Corps, and soon distinguished himself in an arduous campaign against the Apaches. The Spanish War found him on duty in Washington where he had made acquaintance with a congenial spirit in the then Assistant Secretary of the Navy, Theodore Roosevelt. A like vigor of mind, combined with moral force and a love of rude physical exercises, drew these men together, and so when war was declared and the command of the regiment of "Rough Riders" was offered to Mr. Roosevelt, he told the President that Dr. Wood was by reason of his twelve years' experience in the Army much better fitted to cope with the technical difficulties of enlisting, equipping and training a new regiment than he, and he proposed that Wood should be appointed colonel and he lieutenant-colonel. This was done, and the fight at Las Guasimas made Wood a brigadier and gave the regiment to Roosevelt.

After the capture of Santiago, Wood was placed in command of that district and in the space of a year his capacity for organization had so clearly demonstrated itself that he was transferred to Havana and made the military governor of Cuba with the rank of major-general of volunteers. In three years he brought Cuba from a naked and devastated land where famine and disease stalked hand in hand, to salubrity and plenty. The death rate in Havana fell from 91 per 1000 in 1898 to 20 in 1902. In the thirty years preceding his appointment as governor there were in the city of Havana 21,448 deaths from yellow fever and 12,722 from smallpox. In the decade since that date there have been 44 deaths from yellow fever and 4 from smallpox.

But the sanitary regeneration of Cuba and the support and assistance given to the Reed yellow fever board are only a small part of the creditable work of the military governor of Cuba. In every direction in which constructive statesmanship can influence the destinies of a nation, the work of Leonard Wood has left an indelible impress on the government and lives of the Cuban people.

In the twelve years since his taking up the duties of a combatant officer, General Wood has held many important commands at home and in the far east and has been an assiduous student of the military profession. His mastery of it is demonstrated by the practically unanimous approval with which the Army received his assignment as Chief of Staff.

The career of Major-General Fred C. Ainsworth, the Adjutant-General of the Army, while less spectacular in character and far less familiar to the public than that of General Wood, is an equally creditable example of the uplifting power of high ability joined to force of character.

He was born at Woodstock, Vt., Sept. 11, 1852, graduated in medicine at the University of the City of New York in 1874 and entered the Army as assistant surgeon the same year. For twelve years he performed the routine duties of a medical officer, most of this period being passed amid the breezy and often exciting surroundings of the western and southwestern frontier. When in December, 1886, he was placed in charge of the record and pension division of the surgeon-general's office, a condition of affairs confronted him which was of grave concern, not only to the War Department but also to the President and to Congress, and which threatened to become a question of national politics. These were years of great activity in granting pensions, and for each application, the medical record had to be sought in the hospital registers, of which there were more than 20,000 volumes, and the record of service verified by consulting the muster rolls, of which there were about 400,000, in every stage of dilapidation. The former was done in the surgeon-general's office, the latter in the adjutant-general's, and each was several months in arrears. The pension office charged all delays to the War Department and the cry went up that a Democratic administration was obstructing the carrying out of the pension laws. By the introduction of good business methods and business discipline among the three hundred clerks of his division, Captain Ainsworth in

three months caught up and was enabled to answer each call from the pension office within three days. He then set part of his force to copying the hospital records on cards so that all the entries for each soldier were brought together and could be instantly obtained. When this was completed all applications were answered within 24 hours. A special committee of the Senate which investigated the methods of business in the executive departments recommended the extension of Ainsworth's methods to the other bureaus of the War Department, and the Secretary of War, Mr. Proctor, in 1889, consolidated fourteen divisions of the War Department with 700 clerks into the record and pension division, which was placed under Captain Ainsworth, assistant surgeon. The adjutant-general's office unloaded on him in June, 1889, 40,000 unfinished cases and by the end of September all were disposed of and the current work was well in hand. Congress in 1892 erected this division into a permanent bureau, of which Ainsworth was made the head with the rank of colonel. An additional division of the adjutant-general's office was added to it in 1894 and in 1899 Congress still further enlarged it by the addition of the war records office and raised the rank of its chief to brigadier-general. In 1903 Secretary of War Root still further enlarged it and finally in 1904, on his recommendation, Congress consolidated the record and pension office with what remained of the adjutant-general's office after the transfer to the general staff of the advisory functions formerly exercised by the adjutant-general. The head of this new and great office, which distributes and keeps record of the vast business of the War Department and is its mouthpiece, and which is charged with the recruitment of the Army, besides being the custodian of all of the records of all of our wars, was appropriately given the rank of major-general with the title of military secretary, which was later changed to the present one of adjutant-general.

It may well be imagined by those familiar with the jealousies and contentions of departmental life, that a career so full of strenuous activity and accomplishments, of which the victorious efficiency so constantly extended its boundaries, was not entirely peaceful. In fact under this brief narrative lies many a bitter struggle against narrow prejudice, crossed ambition, jealousy and sloth, besides the vast inertia of bureaucratic conservatism. The veteran Senator Cockrell, who was chairman of the special senate committee mentioned above, and than whom none knew better the inner secrets of departmental history, said on the floor of the Senate in advocating General Ainsworth's promotion: "General Ainsworth has done a work which has never been equaled by any executive officer of this government from 1789 to date, and I challenge any comparison with his record."

Members of the medical profession may be permitted to take some pride in these achievements of their confrères.

METHODS FOR THE QUANTITATIVE ESTIMATION OF ALBUMIN IN THE URINE

Clinicians have long been dissatisfied with the results yielded by the Esbach method for the quantitative estimation of albumin in the urine. The dependence of this method (1) on an exact room temperature, (2) on dilution of the urine when the albumin is large in amount, and (3) on a constant acidity are well-known difficulties. Moreover, the precipitate formed often settles unevenly; there is sometimes difficulty in making a correct reading of the meniscus in the tube and, finally, the picric acid in the solution makes it objectionable to handle on account of the staining of the hands and clothes in case of accident. A distinct advance in the quantitative methods of estimating the albumin in the urine was made by Tsuchiya when he introduced his solution consisting of phosphotungstic acid, hydrochloric acid and ethyl alcohol.

The recent study of Mattice[1] shows the great value of Tsuchiya's reagent[2] when used in a certain definite way. Mattice made a large number of control observations with other methods, with results which speak strongly in favor of the use of Tsuchiya's reagent. He finds that the phosphotungstic method is much more accurate than the Esbach method for comparative quantitative estimation of albumin in the urine and urges that Esbach's solution be supplanted altogether in clinical work by Tsuchiya's reagent. The readings are very little influenced by changes in temperature; foaming or floating of the precipitate is rarely seen; the precipitate settles much more evenly than with the Esbach reagent; it is easy to read the meniscus accurately at the mark on the Esbach tube and no dilution of the urine is necessary.

The method is applicable to high grades of albuminuria as well as to the slightest grades. It can also be used where the albuminuria is complicated by glycosuria. The solution is easily prepared, keeps well and does not stain the hands or clothes. It can, therefore, be warmly recommended for clinical use.

THE BRIEF IN DEFENSE OF THE TEN-HOUR LAW FOR WOMEN

The Illinois Supreme Court recently declared constitutional a law limiting the working-day of women in factories and laundries to ten hours. This decision, aside from its intrinsic interest, is noteworthy because in the arguments for the bill and in the decision rendered by the court stress was laid, not on the legal aspect of the question, but on the demands of public health. The brief submitted to the Supreme Court in defense of

1. Mattice, Albert F.: The Quantitative Estimation of Albumin in the Urine, Arch. Int. Med., March, 15, 1910, p. 313.

2. Tsuchiya's method was mentioned in THE JOURNAL, July 25, 1908, p. 333. The reagent is a mixture of 1.5 gm. phosphotungstic acid; 5 c.c. concentrated hydrochloric acid, and ethyl alcohol enough to make 100 c.c. This is used in the Esbach tubes in place of the old picric-citric-acid solution, with technic similar otherwise.

the ten-hour law contains but twenty-four pages of legal matter, the remaining five hundred odd pages being devoted to a review of the literature on fatigue.[1] The document thus becomes one of great interest to physicians, for it is probably the most nearly complete compilation that has ever been made of the publications, both medical and sociological, on the subject of what we must, for want of a better word, call "overwork."

Although the primary object of this brief is to show that the demands of public health require legal restrictions on the work of women because of the peculiar importance to the community of the health of mothers, yet the brief is not limited to the consideration of the overwork of one sex only, but discusses fatigue in all its aspects. The experimental work of Mosso, Helmholtz, Ranke, DuBois-Reymond, Weichhardt and Wolff-Eisner is reviewed. The investigations of German, Italian and French writers on the effect of overwork on the different organs, on the effect of night work, of prolonged standing on the feet, of foot-power machinery, of the speeding up required by the "piece-work system," are fully given. There are also to be found statistics of great interest drawn from the working-class insurance records of Germany.

To the American reader one striking feature of this review of the literature is the small part which our country has taken in this most modern field of research. Quotations from American sources are hard to find and when found they consist chiefly of reports of factory inspectors. Few well-known American names are found in this brief. On the other hand, the foreign quotations bristle with familiar names and it is evident that industrial hygiene ranks as high as any other branch of medicine in Europe. Men who are authorities in physiology, pathology and medicine have investigated the effects of fatigue in the different industries, and practicing physicians of the first rank have appeared before legislators to testify in favor of legal restrictions. When the question of early closing was agitated in England in 1888 a bill to shorten the working-day was introduced by the noted scientist Sir John Lubbock and was supported by a petition from the medical profession signed by such men as James Paget, Richard Quain and W. S. Playfair.

There are some very interesting statistics in this brief as to the increase of nervous diseases which accompanies the increased speed of industry and the greater strain on the attention. Thus the State Invalidity Department of Berlin reported in 1906 that 35 per cent. of the cases treated were neuroses of the heart. Nervous breakdown accounted for over one-half of the men patients during the year and over one-third of the women.

The effect of fatigue on the occurrence of accidents is graphically shown by French and Belgian statistics. The number of accidents increases progressively during the morning hours, drops after the noon intermission and then rises from hour to hour till the end of the working-day, affording a practical illustration of Helmholtz' experiments in attention fatigue.

While the health of the woman herself is important to the community, the effect of her good or ill health on the coming generation is even more important, and as this is one of the strongest points in Mr. Brandeis' argument, we find many statements as to the effect of overwork in women on their fecundity and on infant mortality. The most extensive study of the effect on fecundity seems to have been made by Broggi, who states that of 172,365 Italian women between the ages of fifteen and fifty-four years who were employed in industrial occupations, the average child-bearing coefficient was only 45 per cent. or about one-third of the general fertility of Italian women (120 per cent).

Infant mortality in Germany and England seems to increase progressively according to the increase in the proportion of women engaged in industrial work, and this is true even if the mother's work results in a higher standard of comfort in the home. The two classical demonstrations of this rule are the great Lancashire cotton famine and the siege of Paris, during both of which crises there was loss of employment and great privation. In spite of the starvation and the increased general death-rate the infant death-rate fell, in Paris actually 40 per cent., simply because the women, being out of work, were obliged themselves to nurse and to care for their children.

The overwork of women is not so crying an evil in this country as in Europe, for the number of married women obliged to work outside of their homes is far smaller here, but it must be remembered that in many states the child-labor laws are far from adequate, and even in those states where children under fourteen are forbidden to work, there is still ample time between the age of fourteen and the girl's marriage to allow of serious and permanent injury to health—injury which may result in childlessness or in the bearing of sickly children. It is a matter of common observation that the first generation of children born in this country of foreign parents are inferior in physique to their peasant parents; yet it is precisely these girls who go into the heaviest kinds of factory work and have the longest working-day. It is also these girls who are the coming mothers of the American nation.

Since it is impossible to control beyond a certain point those trades which make especially severe demands on the endurance of women workers, the obvious course seems to be to restrict the number of hours which women may be employed in them. The ten-hour law is a step in the right direction, but it is probable that this generation will not pass away without seeing still further steps taken.

1. Brandeis, Louis D., assisted by Goldmark, Josephine: Brief and Argument for Appellants. In the Supreme Court of the State of Illinois December term, 1909. This is essentially the same brief as that with which Mr. Brandeis successfully defended the ten-hour law for women in Oregon. It is, however, much more exhaustive than the first one.

THE FUTURE OF THE MEDICAL PROFESSION

Dr. Victor C. Vaughan[1] has made an interesting analysis of the present condition of the medical man in this country, in relation to society in general, to industry and to the other professions. He also ventures to make some prophecies regarding the trend of medical science and the place and office of the future practitioner. Dr. Vaughan shows what has been accomplished in this country for the elevation of the profession through an awakened professional conscience, a high code of ethics and harmonious organization. "This is a commercial age and this is preeminently a commercial country, and yet the medical profession is ridding itself of commercialism. It is demanding of those who desire to enter its ranks a higher degree of culture and intelligence than is demanded of any other profession in this country." He sees the activity and usefulness of the physician rapidly expanding and becoming devoted more to the uplift of mankind than to financial gain. "The world has never been in greater need of the enlightened medical man than it is likely to be in the next generation, and the world will demand that he be worthy of the tasks that will fall on him. No other profession will be able to render greater service to mankind."

In view of the great and increasing cost of medical education and investigation in medical sciences, Vaughan thinks that the government should help to pay for them. "The nation that will profit in the future from the labors and discoveries of the profession must help in this cause. It must make large appropriation for scientific research. It must render financial aid to medical education, which has become too costly for the profession itself to provide, and it must not permit the use of short roads to practice. While the advanced medical educator in this country is doing his best to elevate his profession, pseudo-medicine is filling the lobbies of every state capitol with demands for legal recognition, and too often it happens that our law-makers do not distinguish between the true and the false. This imposes a heavy duty on the profession, namely, the education of the public."

Dr. Vaughan enumerates some of the specific ways in which the medical profession can be of service to humanity, and some of the measures necessary to free the race from disease. Among these are the education of the public in the nature of infectious diseases, and the inauguration thereby of measures to restrict and eradicate such pests; the placing of venereal diseases on the list of dangerous and communicable disorders, and the holding in custody of all persons so affected; and the routine medical examination of every person at least twice a year. This last suggestion gives a wider scope to a plan broached by Professor Irving Fisher, already noticed in THE JOURNAL. Unless all signs fail (for many other thinkers have read them in the same sense) the trend of our professional future would seem to be in the direction indicated by Dr. Vaughan, or something closely parallel thereto.

One deduction from these premises, however—it seems to us to be an inevitable one—Dr. Vaughan refrains from drawing, namely, that unless science discovers some way of extracting professional fees from stones, or nutriment from air, there must be a readjustment of the financial relations between the medical profession and the public. Already the profession feels the hardship of having to maintain non-commercial standards while making a livelihood by offering specific individual services to a commercially minded public; and already that commercially minded public begins to realize that every effort of the medical profession to widen the sphere of its public service narrows the circle within which its members may reap individual rewards. What is to be the result in the day when the highest medical skill shall be directed toward the prevention of disease, and an epidemic shall as clearly point to reprehensible neglect on the part of some responsible person as a train-wreck does now? Shall we ever be able to persuade our patients to fee us, as the Chinese are said to pay their physicians, so long as they remain in health? Even if the occidental mind could be brought to regard this procedure as natural, there is an obvious difficulty in the fact that many of the most important works of preventive medicine are not performed for the benefit of any individual; they are public services, and must be paid for, if at all, by the public. Until the day comes, therefore, when the physician's work shall be recognized as essentially a public function, the conscientious physician must be content to regard himself as an unpaid public servant, whose right hand and left are perforce ignorant of each other's doings, since the one is hastily snatching at the indispensable bread and butter, while the other is helping to usher in the new and—let us hope—better order of things.

1. Address on University Day at the University of Cincinnati, published in Science, 1910, New Series, xxxi, 127.

Current Comment

MALTA FEVER

Commenting on a question recently asked in the British House of Commons, relative to the infection of goats with Malta fever, *Nature*, June 16, says that what makes these animals so dangerous in the spread of the disease is the fact that they themselves are so immune. If Malta fever caused in the goat high fever and the other symptoms that it does in man, the animal would cease to be a danger. It would be confined to its stable and its milk would run dry. As it is, the infected goat keeps in apparent perfect health; and therefore the Maltese themselves refuse to believe that the disease is spread through the medium of the milk and have been exporting their infected goats and thus spreading the disorder. Last year the Sleeping-Sickness Bureau of the Royal Society discovered it infecting a large pro-

portion of the native population on the shores of Lake Albert Edward in Uganda, and the native goats were found to be the carriers. Some Maltese goats imported into the United States in 1906 were found to be infected, and but for the rigid quarantine we might have had the disease epidemic here. As it was all the animals, and even the kids born here, had to be slaughtered within two years to prevent the spread of the infection. The prohibition of the use of goats' milk has completely abolished the disease in the British soldiers and sailors in Malta, though it continues to prevail among the native population. It seems strange that the exportation of Maltese goats should be permitted by the British government or that their importation should be allowed by any other—it is, as *Nature* says, almost beyond belief that it should be so. The importation or exportation of the carriers of an acute infectious disease like Malta fever is hardly comparable with that of tuberculous cattle, as *Nature* seems to infer, though that is sufficiently undesirable to call for restrictions.

SANITARY REFORM IN TURKEY

Since the revolution in Turkey with the Young Turkish Party in control there seems to be a better prospect for health and hygiene in the Turkish capital. In former times, any proper medical treatment of Turkish women was rendered impracticable by Mohammedan custom. The advent of women missionary physicians, who were allowed to see their patients, probably started the breaking down of the barriers and gradually there has come a change so that at the present time many Turkish women readily submit to the necessary examinations and treatment by the physician. The change has been accelerated by recent events. One of the most striking changes reported is that of public lectures on hygienic subjects, which seem to be fairly started under the auspices of the American College for Girls in Constantinople. This would have been impossible under the old régime, but in the existing conditions the movement seems to have a very promising future. It will take a long time, of course, to reform the many sanitary deficiencies of the Turkish capital and still longer in the provincial towns and rural districts, but a start appears to have been made and prominent Turkish physicians are actively cooperating in the work.

A CENTENNIAL OF THE WATER-CLOSET

In 1810 the water-closet came into general use in Germany and the Germans are this year celebrating "the centennial of the water-closet." Thirty-five years before that date—that is, in 1775—the first British patent ever granted for a water-closet was issued to Alexander Cummings, a watchmaker; while twenty-three years after —or in 1833—the first American patent was taken out. Like all innovations, it came into general use but slowly, and it was not until 1852 that its value was officially recognized. In that year a municipal ordinance for the city of London went into effect that brought the modern system of sewers into being, and with it the general introduction of water-closets. Who at first could have realized the importance of these few quarts of water in a reservoir as solving the problem of permitting sanitary existence in large cities? To-day the water-closet may be regarded as the stamp of civilization; not until a water-closet system is installed can any populous community now rank as civilized and up-to-date.

HONOR TO CROOKES

The British government has conferred the Order of Merit on Prof. William Crookes in recognition of his eminent work in chemistry and physics. This order, established by King Edward VII as a special distinction for men eminent in science, literature or art, is limited to twenty-four members within the British empire, Lord Lister and Sir Joseph Dalton Hooker being the only members of the medical profession so honored. This well-deserved distinction comes to Professor Crookes as a recognition of his standing as one of the foremost chemists of to-day. His most prominent achievements have been the discovery of thallium in 1861, the invention of the Crookes tube, by means of which Roentgen discovered the *x*-rays, and his investigations bearing on a large number of important problems associated with commercial and theoretic chemistry. In 1898 the British Association for the Advancement of Science elected him president, while many scientific bodies have honored him with office or membership. The appointments of Sir William Crookes and Mr. Thomas Hardy, the well-known English novelist, on whom the honor was conferred at the same time, leaves but a single vacancy in the order.

COMPLETE REPORT ON MEDICAL CURRICULUM

Two years ago the Council on Medical Education, recognizing the tendency to overcrowd the medical curriculum, appointed a special committee to make a careful study of the comparative value of each of the subjects taught and to bring in a report recommending what might be termed a model or standard curriculum. Special pains were taken to have this curriculum represent the ideas, if not the ideals, of as large a number as possible of leading medical educators who would represent all sections of the country. The Council selected chairmen for ten subcommittees and each of these chairmen was asked to recommend fifteen other educators in his subdivision of medicine and, from the names submitted, nine additional selections were made for each subcommittee, making a total of one hundred for the entire committee. These committees entered on the work with remarkable energy and enthusiasm, numerous meetings were held, an enormous amount of correspondence was carried on, ideas were submitted to and suggestions obtained from a large number of other educators acting in an auxiliary capacity, and the result was the report on a model medical curriculum which was submitted at the last year's Conference of the Council on Medical Education. The eagerness with which copies of this report have been sought by medical and

other teachers shows the deep interest which is being taken in the efforts to improve the medical curriculum. So extensive has been this demand that it was decided to issue another edition[1] of the report which would include also the discussions of the subcommittees so far as they could be obtained. The Council has clearly stated that this curriculum is advanced merely for its educational value and not with the idea that all colleges should conform strictly to it. In fact, absolute uniformity of curricula in all colleges is not desirable, although comparative uniformity would be of much benefit in permitting to students more freedom of migration from one college to another and in facilitating a larger interstate reciprocity in the licensing of physicians.

LIFE PROTECTION IN SUBMARINES

As new conditions arise in the varied human activities they necessitate new provisions for safeguarding life. The submarine proves to be almost as dangerous for the operators as for the foe, and many lives have been lost through collision or failure of the submerged vessel to rise. Complicated arrangements have been devised for the release of the imprisoned crew or the provision of air until they can be released; but now comes a more simple invention. According to the *Scientific American*,[2] it consists of two cylindrical shells, one revolving inside the other. The outer opens both to the sea and to the interior of the vessel, while the inner and revolving one has but one opening, which may be turned to the inside of the vessel so that a man may enter, and then to the outside so as to allow escape into the water. The operation is repeated until all have escaped. Only a small quantity of water is admitted each time. It is certainly simple and if it works it may save many lives. We next need a safe means of slow descent when an airship is wrecked too far above ground to allow one to jump with safety.

Medical News

CALIFORNIA

New Hospitals.—A six-story reenforced concrete hospital, with ninety-five foot frontage, is being built on Pine Street, between Jones and Taylor, by William F. McNutt, San Francisco, and will be ready for occupancy in October. It will be furnished with suitable operating rooms, roof garden and solarium, and will accommodate ninety patients.——The Roosevelt Polyclinic has been opened at 679 Broadway, San Francisco. The following are the heads of the departments: Surgery, Drs. Walter G. Harder and Charles A. Pauson, medicine, Drs. Ralph B. Scheier and Herbert I. Bloch; gynecology and obstetrics, Drs. George K. Herzog and Walter S. Johnson; genito-urinary diseases, Drs. Louis Gross and William Edwards; skin diseases, Dr. J. Cameron Pickett; diseases of the eye, ear and nose, Drs. Albert Cohen and Oscar Tobriner; pathology, Dr. Grace Sinforth.——The Southern Pacific Railroad Company is building a new $10,000 hospital at Dunsmuir, to be completed July 1.——Work is soon to be begun on a $20,000 hospital at Lemoore.——The American Mutual Hospital Association at Taft is about to erect a new building to take the place of the present hospital.——A hospital is being fitted up at Ferndale in the building formerly occupied by the Sisters of Mercy.——The new Kaspare Cohn Hospital was dedicated June 19 at Los Angeles, the hospital being the gift of Kaspare Cohn, a wealthy resident.——A new hospital has been opened at Coalinga, called the San Joaquin.

GEORGIA

College Closes on Account of Typhoid.—Wesleyan Female College, Macon, was closed for the balance of the term on account of an epidemic of typhoid fever.

College Commencement.—At the annual commencement exercises of the Medical Department of the University of Georgia, Augusta, degrees were conferred on ten physicians. Dr. Joseph E. Allen, who has been dean of the medical college for four and a half years, retired and was succeeded by Dr. William H. Doughty.

Personal.—Dr. T. E. Rogers has been elected a member of the house-staff of the hospital at Macon.——Dr. and Mrs. Eugene B. Elder, Macon, are spending their vacation in Berlin.——Dr. Theodore E. Oertel, Augusta, has been elected president of the Antituberculosis and Sanitary Society of the State of Georgia.——Dr. John F. Harris has been appointed on the board of health at Dalton.——Dr. Robert G. Stephens has been elected city school medical examiner at Atlanta, vice Dr. Stewart R. Roberts, resigned.

ILLINOIS

New Hospital.—Work on the new hospital at Monmouth to take the place of the old building has been begun. The hospital will be ready for occupancy by April, 1911, and will cost $37,000.

Personal.—Dr. Anne J. Murphy, formerly house physician at the New England Hospital for Women and Children, Boston, has been appointed on the resident staff of the Edward Sanatorium at Naperville, to have charge of the new laboratory.——Dr. Harry C. Hill and family, Streator, have returned from abroad; Dr. Hill spent most of the time in the hospitals of Vienna.——Dr. Julius Wen Glesky, assistant superintendent and chief of the medical staff of the Eastern Illinois Hospital for the Insane, Kankakee, has resigned. He will go to the Sacred Heart Sanitarium, Milwaukee.——Dr. Charles O. Molz has been appointed assistant surgeon at Murphysboro for the Mobile and Ohio railroad.

Chicago

Less Typhoid in Chicago.—The report for the first six months of 1910 for the city shows 94 deaths from typhoid fever, equivalent to a rate of 8.3 per 100,000 of population. The rate last year, under similar computation, was 12.5 for the first half of the year. This shows the lowest record ever recorded in an American city of 200,000 population or over. The deaths from typhoid in June numbered 10.

Society of Mental Hygiene.—The Society for Mental Hygiene has been granted a charter. Among the organizers are Drs. Henry B. Favill, Sidney Kuh and Alice Hamilton, Miss Jane Addams, Samuel Alschuler and Miss Julia Lathrop. The object is the investigation of the conditions surrounding the commitment of the insane and attending to their welfare after they have been dismissed from institutions.

Report of the Milk Commission.—The preliminary report of the milk commission recently appointed by the mayor to the city council states that in the opinion of the commission, after investigation, the milk supply of Chicago as shown by high bacterial count is probably the dirtiest of any large city in the United States. The commission does not blame the health department for this condition, but states that the department is undermanned and underpaid, and that the whole matter requires further study preparatory to drafting an entirely new set of ordinances concerning the milk supply. For the present the commission recommends that means be provided for the rigid enforcement of existing ordinances by materially increasing the number of inspectors, and also that action be taken by the council to forbid the marketing of any milk at a temperature above 50 degrees F.

MARYLAND

Physician Injured.—Dr. George L. Broadrup, Cumberland, sustained severe injuries, July 8, from being run down by his own automobile. He had failed to throw it out of gear and when he cranked it it rushed forward, throwing him over an embankment and pinioning him against a house, causing a broken ankle, several fractured ribs and bad cuts.

1. A copy of the complete report will be sent to any address on receipt of 5 cents for postage.
2. Scientific American, June 18, 1910, p. 504.

Baltimore

Registration of Midwives.—The Committee of Health calls on all midwives to register by August 1. The law lately passed requires them to register at the health office and to obtain a certificate from the State Board of Health.

Health Notes.—The health report for June shows 193 cases of tuberculosis reported, as against 80 for June, 1909. This is supposed to be due to the fuller reports of the disease now than formerly. There were 89 deaths from the same disease against 83 last year. The total deaths from all causes were 798 against 722 last year; 237 were of children under 5.

Personal.—Drs. C. A. Clapp, E. A. Knorr, Carl Voegtlin, J. M. West, J. Mabry Matthews and Christian Deetjen have sailed for Europe.——At the first meeting of the Municipal Tuberculosis Commission, July 7, Dr. John S. Fulton was elected chairman.——Dr. Marshall West has been made health officer for the First district to take the place of Dr. Arthur H. Mann, who resigned on account of ill health.

Municipal Tuberculosis Commission.—The mayor has appointed the following Municipal Tuberculosis Commission: The mayor (ex-officio), Dr. Thomas McCrae, Dr. John S. Fulton, Dr. Harry Friedenwald, Mr. Henry S. Delaney, Mr. Robert Biggs and Mr. J. B. Noel Wyatt. The board of estimates has appropriated $2,500 to start the work, which aims at nothing less than stamping out the disease here.

Driving the Physician Out of Practice.—The many agencies and activities tending to drive the physician out of practice were enumerated in an address by Dr. Richard C. Cabot of Boston at Johns Hopkins recently. It was maintained that the physician is being superseded by health boards, hospitals, insurance companies and other general welfare agencies, and that the tendency is toward the support of hospitals and hospital physicians by public funds, public health being considered of supreme importance to the nation, superior even to public education. In Boston they have gone beyond most other cities in having nurses in department stores and factories. Cabot calls attention to the fact that five years ago there were twenty-five thousand medical students in the country, whereas there are now but twenty thousand, and the diminution is continuing in this steady ratio. He says physicians face this condition, but should get behind it and help it along, as there is no doubt that in the majority of instances the patient with all the facilities of the hospital, the possibility of team work among the physicians, and the trend to higher specialization, get better results from a hospital than is possible in the office of the practicing physician, and better results, i. e., better public health, is what the nation wants. It is of vital importance, and not even second to education, which the state already has assumed charge of.

NEW JERSEY

New Tuberculosis Pavilion.—A new tuberculosis pavilion located on the grounds of the Isolation Hospital at Paterson was opened for patients July 1. It is a model institution.

Sum Raised for New Hospital Building.—For the purpose of erecting a new homeopathic hospital building, the trustees, board of managers, the medical and surgical staff and the citizens' committee have succeeded in raising $100,190 in Camden, after a campaign of twenty days.

Hospital Plans Extension.—Announcement has been made that a contract has been awarded at Camden for a new building for the use of the Cooper Hospital out-patient department and for other purposes at a cost of $60,000. The removal of all private patients to this new building will enable the hospital to use the rooms now occupied by such cases in the main building, for ward purposes.

Trenton Water Supply.—Suit has been brought against the city of Trenton under the law of 1909 to compel the purification of Trenton's public water supply. Affidavits submitted show that the supply is polluted. Under the above law the state board of health has a right to institute suit in the Court of Chancery against the offending municipality to obtain purification of the public water supply. The report of the state board of health for June shows that the public is beginning to realize the value of the examination of water supplies by the state board of health, as more numerous requests for such examination are being made. The report also shows that the number of deaths from cancer has increased, the report for June showing the highest number of deaths, with one exception, for any month during the past four years.

NEW YORK

Keuka Lake Society to Meet.—The eleventh annual meeting of the Keuka Lake Medical and Surgical Association, whose membership embraces twelve counties in central and eastern New York, will be held at Grove Springs, Lake Keuka, July 21 and 22. A program of fourteen papers has been prepared. Dr. Robert M. Elliott, Willard, is president and Dr. H. B. Nichols, Syracuse, secretary.

The Fight Against Tuberculosis.—The Charity Organization Society, the State Charities Aid Association and the New York State Department of Health, organizations which are conducting the crusade in this state against tuberculosis, report that New York leads the country with 5,476 beds for consumptive patients. Massachusetts provides 2,403, Pennsylvania, 2,347, Colorado, 1,489 and New Mexico, 1,104. Facilities in this direction are, however, very inadequate.

Personal.—Dr. Mercer C. Robinson, Rochester, is in the hospital suffering from severe injuries received in a collision between his automobile and a street car.——Dr. Ira C. Whitehead, health officer of Montgomery, has smallpox, which it is supposed he contracted during a recent visit to the Immigration Bureau in New York.——Dr. Archibald M. Campbell, Mount Vernon, has sailed for Europe.——Dr. Aspinwall Judd and Dr. William J. Robinson and family, New York City, have sailed for Europe.

Harbor Pollution.—The Metropolitan Sewage Commission has reported that the sewage which is being emptied into the harbor is creating conditions which are unsanitary and a menace to public health. Tidal studies carried on in connection with the United States Coast and Geodetic Survey show that the drainage which is discharged into the harbor is not flushed out to sea but is assimilated by the water. The commission recommends that an interstate board be created by New York and New Jersey to plan a system that will protect the harbor for all time to come.

New York City

Suspicious Hospital Fires.—There have been two fires recently in the Kings County Hospital, Brooklyn. The last one on July 5 caused $2,000 damage and threatened the lives of 250 people. Investigation seems to indicate that they are due to incendiarism and arrests are expected.

The Peoples' Hospital.—This institution, situated on lower Second avenue, was dedicated June 21. It was built and presented to the public through the efforts of Austro-Hungarian citizens, the emperor of Austria having donated an operating table. The building has accommodations for fifty patients.

A Roof Camp.—A camp has been opened on the roof of the New York Throat, Nose and Lung Hospital on East Fifty-seventh Street for the treatment of tuberculosis patients. The camp is open on three sides and has ventilating skylights. It has a dining room, dormitory, dressing rooms and a shower bath.

Seizure of Ice Cream Cones.—More than 4,500,000 ice cream cones were seized by United States Marshal Henkel of New York, under the pure food law, on the ground that they contained boric acid and were detrimental to the public health. They were intended for shipment to Galveston, Tex. It has been found that ice cream cones are often composed largely of glue.

To Stop Smoke from Autos.—The amendment to the sanitary code relating to smoking automobiles has become operative. Drivers and owners of autos that throw out smoke are liable to arrest and fine. Seventy men of the sanitary squad were on duty when the amendment went into effect to see that it was obeyed. A slight smoke is overlooked or passed with only a warning.

Donations to Medical College.—Word from Dr. Royal S. Copeland, dean of the New York Homeopathic Medical College and Flower Hospital, states that $25,000 has recently been donated by the alumni and by the trustees for improvement of the laboratories and for changes in the college building. Several full-time salaried instructors in the laboratory branches are to be added.

A Sane Fourth in New York.—In accordance with the city ordinance forbidding the sale of fire crackers, fireworks, etc., these things were not on sale and the city had a quiet and orderly day. The health department had laid in the usual supply of tetanus antitoxin and sent out the usual directions for its use. Not only were there very few instances where the antitoxin was needed, but there was a great falling off in the number of fires. Last year there were 176 fires attributable

to fireworks, while this year there were only 33. The damages from fires were only a little more than three thousand dollars this year against $20,000 for 1909.

NORTH CAROLINA

Tuberculosis Exhibit.—The National Tuberculosis Association recently held a very successful exhibit in Winston, creating much interest, the exhibit being inspected by several thousand people.

State Medical Board.—At the forty-eighth annual session of the State Board of Medical Examiners, at Wrightsville Beach, June 15-23, the board was reorganized with the election of Dr. Lewis B. McBrayer, Asheville, president for the ensuing year. Dr. Benjamin K. Hays was reelected secretary-treasurer.

Society Meeting.—The Sixth District Medical Association held its regular session at Raleigh recently. In addition to the instructive papers read, clinics were given at the Raleigh hospital. The following were elected officers: President, Dr. George W. Long, Graham; vice-president, Dr. Louis J. Picot, Raleigh; secretary, Dr. Charles A. Woodward, Durham.

Work of Hookworm Commission.—The North Carolina State Board of Health, working in conjunction with the Rockefeller hookworm commission, has appointed Dr. John A. Ferrall, special assistant secretary of the board for hookworm work. At a recent session, the state was divided into districts and the following physicians elected to make a thorough canvass of the state, working along anti-hookworm crusade lines: Dr. B. W. Page, Snead's Ferry; Dr. C. F. Strosnider, Wilmington; Dr. Claud L. Pridgen, Kinston.

Personal.—Dr. Benjamin K. Hays, Oxford, has been appointed local surgeon of the Southern Railway at Oxford.——Dr. David J. Hill, Lexington, has been appointed local surgeon of the Southern Railway at his home town.——Dr. Robert L. Payne, formerly of Lexington, has been appointed chief surgeon of the Norfolk & Southern Railway with headquarters at Norfolk, Va.——Dr. John Miller Faison, of Faison's, Duplin County, was nominated by the democratic party of the third district for Congress. Dr. Faison is a well known practicing physician, a prominent member of the State Medical Society, and his political recognition is appreciated by many friends in the profession.——Dr. John E. Ashcroft, Monroe, has been elected a member of the State Board of Health, vice Dr. James A. Burroughs, Asheville, deceased.

State Medical Society Meeting.—The fifty-seventh annual session of the Medical Society of the State of North Carolina was held at Wrightsville Beach June 21-23, under the presidency of Dr. Edward Jenner Wood, Wilmington, vice Dr. James A. Burroughs, president, deceased. The attendance was the largest in the society's history for a session at an extreme point in the state, more than 300 members being present. The session of 1911 will be held in Charlotte. The following officers were elected: Drs. Chalmers M. Van Poole, Salisbury, president; James V. McGougan, Fayetteville; William E. Warren, Williamston, and Lucius N. Glenn, Gastonia, vice-presidents; David A. Stanton, High Point, secretary; Herbert D. Walker, Elizabeth City, treasurer; James M. Templeton, Cary, orator; Samuel A. Stevens, Monroe, essayist; John M. Campbell, Morganton, leader of debate; Jacob F. Highsmith, Fayetteville, and J. Howell Way, Waynesville, delegates to American Medical Association, 1911-12. At one general session a conference on hookworm disease was held and a paper was read by Dr. Charles Wardell Stiles, scientific secretary of the Rockefeller hookworm commission. A night session was given over by the society to memorial exercises in honor of the thirty members who died during the year. Dr. J. Howell Way, of Waynesville, made an address on the life and character of Dr. James Anthony Burroughs, of Asheville, who was president of the society at the time of his death, and Dr. William Henry Harrison Cobb, of Goldsboro.

OHIO

Tuberculosis Hospital.—Construction has begun on the new tuberculosis hospital of the county infirmary at Columbus.

Public Health Bulletin.—The Board of Health of Columbus has begun publication and distribution of a bulletin to educate the public in sanitary and hygienic matters, following the plan of other cities.

College Merger.—It is reported that the Pulte Homeopathic College is to be merged with the Cleveland Homeopathic College. The consolidated school will be located at Cleveland and will be known as the Cleveland-Pulte Homeopathic Medical College.

Health Board News.—The mayor of Cleveland has appointed Drs. Edward F. Cushing and James E. Cogan on the health board of that city, and $40,000 has been voted to the board of health to complete the contagious disease hospital and to fight smallpox.

School for Medical Officers.—A school for medical officers of the Ohio National Guard, the first of its kind in the state, was held at Columbus in June. Major Joseph A. Hall, Cincinnati, acting surgeon-general of the guard, was the originator of the plan. The officers were instructed by Major Edward L. Munson, medical corps, U. S. army, and Major S. B. Taylor, medical corps, Ohio N. G. The meeting was attended by more than fifty members of the medical staff.

Personal.—Dr. Luther B. Turner, Columbus, has been elected district physician to succeed Dr. Lewis D. Wolfe, who resigned.——Dr. Arthur M. Harrison, Bowling Green, has been appointed assistant surgeon in the medical corps of the Ohio National Guard with rank of first lieutenant.——Dr. Robert H. Butler, Bellefontaine, has been appointed an assistant clinical instructor on the faculty of the Ohio-Miami Medical College, Cincinnati.——Dr. John C. Jones, a member of the board of education of Cleveland, and two daughters, are in Europe.——Dr. George M. Osborne, Portsmouth, has retired from practice.——Dr. Robert C. Longfellow, Toledo, in recognition of work done in laboratory pathology and bacteriology, has been given the degree of M.S. by St. John's University, Toledo.——Dr. John C. Fox, Cleveland, has been appointed physician at the City Hospital.

Changes at the University of Cincinnati.—At a meeting of the trustees of the University of Cincinnati, May 31, on the recommendation of President Dabney, a complete reorganization of the faculty of the Ohio-Miami Medical College (medical department of the University of Cincinnati) was adopted. It was found during the year just closed, the first year of the union of the Ohio and Miami colleges, that the faculty was much too large and consequently too unwieldy. The new plan provides for a clinical head and a didactic head in the more important departments, while in the smaller departments the two positions will be combined. The plan also provides for a salaried dean. The chiefs of the fundamental chairs of anatomy, physiology, pathology and chemistry will be on salary and will devote their entire time to the work. Dr. Paul G. Woolley, formerly of the University of Nebraska College of Medicine, is now the professor of pathology with Dr. William B. Wherry as assistant professor of bacteriology; Dr. Martin H. Fischer, of the Oakland (Cal.) College of Medicine and Surgery, has been secured as professor of physiology. A full-time professor in anatomy is still to be secured.——Dr. Charles E. Howard has been appointed receiving physician to the Cincinnati Hospital, vice Dr. Robert D. Mussey, resigned.——Dr. Rufus B. Hall has been appointed gynecologist to the Cincinnati Hospital, vice Dr. Charles L. Bonifield, resigned.

PENNSYLVANIA

Personal—Dr. H. J. Huber of Lancaster has located an office at Reading.——Dr. Leo Mundy of Wilkes-Barre will take charge, for several weeks, of the State Hospital at Holidaysburg, Blair county.

New Hospital at Wilkes-Barre.—It is planned to have a new hospital ready by November 1 at Wilkes-Barre. The physicians interested have empowered a committee to purchase a site at Hanover street and Carey avenue.

Scarlet Fever Prevents Outing of Insane.—The usual picnic at the State Hospital for the Insane which was to be held on July 4, was postponed because of scarlatina in a nurse. She was removed to the Municipal Hospital, Philadelphia, and a possible epidemic prevented.

A Prize Paper.—The State Pharmaceutical Association of Pennsylvania recently awarded its twenty-dollar gold prize to Dr. F. E. Stewart for his paper on "Patents and Trade-Marks," which was read before the Philadelphia branch of the American Pharmaceutical Association.

Sanatorium Receives Donation.—The Berks County Tuberculosis Society received two checks from wealthy philanthropic women of Reading. The money will be used toward the expense of a second building at the society's camp on Neversink Mountain for the accommodation of sixty additional patients.

Meeting of County Society.—The Blair County Medical Society met at Blair County Hospital, Altoona, June 28. Dr. W. M. Late Coplin, professor of pathology at Jefferson Medical College, delivered the chief address. The hospital was inspected and Dr. Sommers, its superintendent, gave a luncheon.

Tuberculosis Notes.—The Board of Health of Reading decided, June 27, to prohibit the use of public drinking cups.——The State Tuberculosis Exhibit was held in Wilkinsburg, near Pittsburg, June 28 to 30. Dr. John Bouse of the State Health Department, addressed a meeting on June 28 on tuberculosis in Pennsylvania.

Alumni Association Meets.—The Lehigh Valley Alumni Association of the Medico-Chirurgical College of Philadelphia met at Easton, June 26, and elected the following officers: President, Dr. F. E. Ward, Easton; vice-presidents, Drs. W. G. Tillman, Easton, Jacob Fraunfelter, Nazareth, and C. S. Kemper, Bethlehem; secretary, Dr. V. S. Messinger, Easton.

Williamsport Hospital Report.—In the annual report attention was called to the fact that the hospital has expended during the past decade for additions, new buildings and improvements $167,800, of which only about one-fourth was money secured from the state. The institution has grown to three times its former size and capacity, while its indebtedness for maintenance is less than one-seventh of what it was ten years ago. More patients were admitted last year than in any previous twelve months in its history, the average daily number being 92.2. The executive committee is composed of Dr. George D. Nutt, Dr. H. G. McCormick and Samuel N. Williams.

Philadelphia

Personal.—Dr. T. J. Ellinger, operated on for appendicitis July 9, is improving rapidly.——Dr. W. Wayne Babcock and Dr. and Mrs. Ellwood Matlack have sailed for Europe.

Physician in Serious Accident.—Dr. B. Franklin Stahl, while enroute to Maine in an automobile, was seriously injured by the turning over of the machine on a steep grade near Great Barrington, Mass. Mrs. Stahl was killed instantly. Dr. Stahl is lecturer on dietetics in the University of Pennsylvania, and wrote an article for the last Automobile Number of THE JOURNAL.

TEXAS

Personal—Dr. Whitfield Harral, medical director of the Southwestern Life Insurance Company, Dallas, was elected director of the exchange department of the American Life Convention at a meeting in Dallas, July 2.

Vaccination at El Paso.—On account of the recent epidemic of smallpox in northern Mexico, the health board of El Paso vaccinated over 5,000 persons and issued certificates of vaccination to over 12,000 people. The quarantine has been raised at El Paso and Juarez.

Society Meeting.—At a meeting of the Taylor County Medical Society held on June 27, in Abilene, Dr. Charles M. Rosser, Dallas, delivered an address on "Cancer of the Uterus." A dinner was given in honor of Dr. Rosser at the Hotel Grace. Covers were laid for thirty.

Laboratory of Preventive Medicine.—The board of regents of the University of Texas, at a meeting held May 31 at Galveston, approved the plans submitted by the faculty of the Medical Department for building and equipping a laboratory of preventive medicine and public health.

State Board Meeting.—At the meeting of the State Board of Medical Examiners, ending June 30, the following officers were elected: Dr. James D. Osborn, Cleburne, was reelected president; Dr. John D. Mitchell, Fort Worth, was reelected vice-president, and Dr. Robert H. McLeod, Palestine, was elected secretary-treasurer. Governor Campbell, the judges of the higher courts and the members of the board dined together at the Driskill Hotel, June 30.

College Commencement.—At the commencement exercises of the medical department of Fort Worth University, eleven physicians were graduated. Dr. Charles W. Stiles, U. S. P. H. and M.-H. Service delivered the principal address on "Hookworm and Typhoid Fever." Dr. Stiles said that it is through lack of sanitation that hookworm spreads and with it typhoid fever, which he claimed were the most loathsome and useless diseases known in medical annals. He said that we are dirtier than the Italian, that the Prussian equaled the American in conceit, but that no nation on earth equals us in filth. He declared that over 35,000 people die annually from typhoid fever in this country and our filth is responsible for it.

WISCONSIN

College Commencement.—At the seventeenth annual commencement exercises of the Wisconsin College of Physicians and Surgeon, Milwaukee, medical degrees were conferred on six graduates.

State Appointments.—The State Board of Control of Wisconsin Reformatory, Charitable and Penal Institutions has appointed the following physicians: Dr. Charles Gorst, superintendent of the Mendota Hospital for the Insane; Dr. W. A. Sherman, superintendent of the Northern Hospital for the Insane, Oshkosh; Dr. L. Rock Sleyster, physician to the State Reform Prison at Waupun; Dr. Alfred W. Wilmarth, superintendent, and Dr. Augustus L. Beier, assistant superintendent, Home for Feeble-Minded at Chippewa Falls, and Dr. John W. Coon, superintendent of the Tuberculosis Sanatorium at Wales.

Bequest to Medical School.—By the will of the late Dr. Byron Robinson of Chicago, of the class of '78, the Medical School of Wisconsin University receives his collection of books amounting to over 1,500 volumes. The library is unusually rich in early American medical treatises and old anatomic plates, besides modern works on anatomy, and on the history of medicine. A scholarship in anatomy worth $550 a year was also provided for in the bequest. The library is to be known as the Robinson-Waite Library in honor of the donor and his wife, Dr. Lucy Waite Robinson. The scholarship is to be known as the Byron Robinson scholarship in anatomy.

State Society Meets.—At the recent meeting of the State Medical Society of Wisconsin in Milwaukee the following officers were elected: President, Dr. Byron M. Caples, Waukesha; vice-presidents, Drs. John M. Dodd, Ashland; Theodore J. Redelings, Marinette, and Wilson Cunningham, Platteville; secretary, Dr. Charles S. Sheldon, Madison; assistant secretary, Dr. L. Rock Sleyster, Waupun, and treasurer, Dr. Sidney S. Hall, Ripon. To act on Council on Health and Public Instruction of American Medical Association, Dr. Charles R. Bardeen, Madison, vice W. B. Hill; delegate to National Legislative Council, Dr. Byron M. Caples, Madison; delegate to Council on Medical Education, A. M. A., Dr. M. P. Ravenel, Madison; delegates to A. M. A., Drs. Charles Sheldon, Madison, and A. H. Levings, Milwaukee; alternates, Drs. W. Cunningham and R. G. Sayle. The 1911 meeting will be held at Waukesha. Dr. Richard M. Pearce of the Carnegie laboratories, New York, and Dr. Joseph C. Bloodgood, Baltimore, were the guests of the society.——The first annual meeting of the Association of County Secretaries and Officers of the State Medical Society of Wisconsin was held in Milwaukee just prior to the meeting of the state society. There was a good attendance and many subjects relating to organization were discussed.

GENERAL NEWS

Printers' Tuberculosis Sanatorium.—At the meeting of the International Printing Pressmen and Assistants' Union at Columbus, provisions were made for the establishment of a national tuberculosis home for printers and pressmen at Hales' Springs, near Asheville, N. C.

Beriberi in the Philippines.—Dr. Victor G. Heiser, director of health in the Philippines, has evolved a plan which will make the Philippine Islands the first country in the east to wage a systematic war on beriberi. It is believed from recent studies that the disease is caused by a continued diet of polished rice, and Dr. Heiser proposes to abolish its use in the government workshops, prisons and other public institutions and substitute therefor red rice, containing phosphorus, the lack of which causes beriberi. An idea of the ravages of this disease in the Philippines may be gained from the fact that in the city of Manila alone the number of deaths from beriberi is 1,900 annually.

Prize Offered by International Dairy Federation for Essay on Milk.—The International Dairy Federation offers a prize of 500 francs ($100) for the best work on the comparative value of raw and cooked milk, to be submitted to the International Dairy Congress annually. The exact question is as follows: "To determine by latest experiments, made at least in part on man himself, the comparative nutritive value of raw milk and cooked milk (pasteurized, sterilized or desiccated). In case of an advantage in favor of raw milk, to determine the rôle that the enzymes of the milk play in nutrition." This prize is a permanent one, and is to be conferred at each of the international sessions of the Dairy Congress. Papers may be in French, German or English, and should be forwarded to the Secretary-General of the International Dairy Federation,

23 Rue David Desvachez, Brussels-Uccle, Belgium, not later than April 1, 1911.

Health in the Philippines.—The annual report of the Bureau of Health of the Philippine Islands—July 1, 1908, to June 30, 1909—contains a review of the work done by the department under Dr. Victor G. Heiser, Director of Health. The pamphlet is well illustrated and contains numerous charts, together with statistical tables covering the health and vital statistics from every angle, and the report shows that much effective work has been done in improving the sanitation and health of the islands. Manila being the largest city, and much public improvement work having been done there, a large portion of the report is taken up with what has been accomplished in that city. A new gravity water system, the supply for which is collected from an uninhabited watershed, has been so far completed that the water from it was turned on in November. In May the new sanitary sewer of the city was completed, but according to the quarterly report of the department for the last quarter of 1909 not a large number of house connections have yet been made, owing to the fact that many houses are of cheap construction and the owners cannot afford to install plumbing, the cost of which in many instances would equal or exceed the value of the property. The full benefit of the new sewer system on health conditions has not therefore been had. The bureau of public works sunk about 40 artesian wells and the provinces about as many more. The Baguio Hospital at Benguet, with a capacity of 44 patients, was opened in July. The modern reinforced concrete hospital at Bilibid, with a capacity of 376 patients, was put into use in February. The capacity of the Culion leper colony was increased to accommodate 1,900 lepers. It is found that leprosy is decreasing, so that one case in 2,800 of population is now discovered as against one in 2,000 previously found. Lepers are being collected in all the provinces and isolated in the Culion colony. A hookworm commission was placed in the field at Taytay and another at Las Piñas. Extensive drainage improvements were made on the San Lazaro Estate, making it possible to transfer over 1,000 persons who had previously occupied insanitary areas. In addition much routine work has been done by the department, including the suppression of a number of epidemics of cholera. It has been found in Manila that many cases have been reported as meningitis which on investigation proved to be cholera, and in many instances these were the foci from which subsequent outbreaks of cholera occurred. The report states that it is becoming more evident that by the observance of a few simple rules good health can be maintained with more certainty in the tropics than in temperate climates. Among the rules set out are the following: Be vaccinated; never drink water unless it has been boiled or distilled and never eat raw vegetables; thus you will avoid dysentery, cholera, typhoid fever and other intestinal diseases; fruit grown on trees may be eaten with impunity; do not use "patent medicines" or alcoholics; they are not necessary; sleep under a good mosquito net. Mosquitoes of the disease-carrying variety generally only fly at night. Otherwise observe the same hygienic rules that are applicable to temperate climates. The report contains studies of the different diseases and the methods employed in the different cities and provinces to combat them, the whole showing that conditions are constantly improving.

FOREIGN

Monument to Professor D'Urso.—During the annual session of the Sicilian Medical Association, held at Messina recently, a monument to its former president, G. D'Urso, a victim of the Messina earthquake, was unveiled in a public square.

Brazilian Neurologic Society.—At the meeting of the Brazillian Society of Neurology, Psychiatry and Legal Medicine, held at Rio de Janeiro, May 1, the following officers were elected: President, Prof. Juliano Moreira of Rio de Janeiro, director of the National Hospital for the Insane; vice-president, Dr. Carlos Eiras; secretaries, Dr. H. Roxo and Dr. Mario Pinheiro, and treasurer, Dr. A. Ramos.

Prize to Sanfelice for His Research on Cancer.—The Balbi-Valier prize of $600 was awarded this year to Prof. F. Sanfelice of Messina for his fifteen years of research on cancer which have resulted in the production of his cancer serum. (It was described in THE JOURNAL, June 26, 1909, page 2117.) The prize is awarded biennially to an Italian by the Venice Regio Istituto di Scienze, Lettere ed Arti for the greatest progress in medicine or surgery during the preceding two years.

Personal.—Dr. Wilhelm Roux, professor of anatomy at Halle, eminent for his contributions to embryology, celebrated his sixtieth birthday June 9, and a *Festschrift* in two volumes was presented to him.—Dr. E. A. Schäfer, professor of physiology in the University of Edinburgh, has received an honorary doctorate of medicine at the University of Berne, after lecturing at the university on "The Functions of the Pituitary Body."——Dr. Wolferstan Thomas, assistant lecturer in the Liverpool School of Tropical Medicine, has been appointed director of the new laboratories established in the state of Amazonas.——Surgeon E. L. Atkinson, R. N., is to accompany Capt. R. F. Scott and his Antarctic expedition, as doctor, bacteriologist and parasitologist.

Other Deaths in the Profession Abroad.—Dr. Edward Cresswell Baber, M.B., L.R.C.P., M.R.C.S., linguist, scientist and laryngologist, a son of Dr. John Baber, of London, England, died in London May 14. He was noted for his studies of the thyroid in the lower animals, and as a laryngologist. He practiced in Brighton, where he was the founder of the Brighton Throat and Ear Hospital, and also in London.—— Sir Francis Seymour Haden, F.R.C.S., of London, the famous etcher, and a noted surgeon in his day, died June 1 at Bramdean, Hampshire, aged 92.——William Rose, B.S., F.R.C.S., emeritus professor of surgery in King's College, author of works on surgery, died May 28 in London, aged 63.——William Henry Spencer, M.A., M.D., Cantab., M.R.C.P., Lond., formerly senior physician to the Royal Bristol Infirmary, died at Oxford, May 27, aged 73.——P. J. Pick, M.D., professor of dermatology at Prague until 1906, founder in 1869 of the *Archiv für Dermatologie und Syphilis*, died at Prague recently in his seventy-sixth year. The hundredth volume of his *Archiv*, which was dedicated to Caspari, contained a notable report from Pick on the later history of his syphilis patients. He aided in founding in 1898 the German Dermatologic Society and has been its perpetual president since, has contributed over 200 works on dermatology to the literature, and introduced iodoform into dermatologic practice as also the medicated gelatins.——Paulin Trolard, M.D., professor of anatomy in the Algiers College of Medicine.

LONDON LETTER

(From Our Regular Correspondent)

LONDON, July 2, 1910.

A New Development in Library Work

The Royal Society of Medicine has instituted a new development by which its magnificent library may be useful to its fellows living in any part of the world. Short abstracts are prepared for them gratis, of papers and even of books, on any medical subject, and references to medical literature searched for and checked. This innovation has been warmly welcomed and grateful letters have been received from such remote places as the Chitral Valley, the Sudan and equatorial Africa, where for years men have had their work hindered by the inaccessibility of libraries. Some say that the work is done for them even better than if they had been in London, for they would probably not have been able to devote the many hours required for the research which the machinery of the library procures with a minimum of time and labor.

Relation of Medicine to Surgery

In recent years the development of the surgery of the internal organs—abdominal surgery, thoracic surgery and brain surgery—has involved a considerable encroachment by the surgeon on what was once the exclusive province of the physician and the process is by no means at an end. In a letter to the *Times* a layman advocates the handing over of appendicitis in particular and abdominal disease in general from the physician to the surgeon on the grounds that the latter's experience is more valuable, "he sees inside and outside," etc. This has called forth a reply from Sir Clifford Allbutt who points out that in the Hippocratean age there was no division of the art into medicine and surgery and Celsus recognized no such division. It was left for imperial Rome, with its formal ideas and medical slaves to initiate and for the feudal and ecclesiastical societies of the middle ages to extend and perpetuate the separation of the medical bookman from the medical workman. "The division between medicine and surgery was not a division of nature but an arrogant repudiation of the part of the hands in the work of the world." This fantastic separation of the thinker from the craftsman has produced, Sir Clifford says, enormous hindrances and ambiguities to which the divided practice in some cases of appendicitis calls attention. The gynecologists, who have seen the evil, have thrown over the convention and practice all the methods which the cases under their care require. The whole profession will have

to follow suit and liberate physicians for the complete performance of their own responsibilities. These contentions do not question the need of specialism. This is another problem. One physician will make himself completely efficient in abdominal disease; another in diseases of the pelvis; another of the chest, and so on; while some will prefer diseases in which, if surgery is not yet applicable, the most excellent education of the hand will be maintained by chemical and other manipulations. There is no longer place for the mere academic or book-doctor. For this integration of medicine and the healing of its crippling schism, Sir Clifford recommends the amalgamation of the Colleges of Physicians and Surgeons into an Academy of Medicine.

Medical Missionaries

The important part played by physicians in missionary work was shown at the World Missionary Conference which has recently taken place at Edinburgh, where it was freely admitted that medicine was a most powerful auxiliary to doctrinal teaching. Of the 5,522 Protestant regular missionaries now at work in the world 641 men and 341 women are medically trained and duly qualified. There are 550 hospitals and 1,024 dispensaries employed in missionary work. On the question of the training of medical missionaries there was a unanimity of opinion that the medical missionary could not be too highly trained in his profession. Candidates were advised to take postgraduate study in such subjects as tropical diseases and ophthalmology. It was further suggested that practical experience of hospital work as a resident, either at home or on the field, was desirable before undertaking the duties of a medical mission station for the first time.

Artificial Teeth the Cause of Death

A curious case of death the remote result of a motor accident has been the subject of a coroner's inquest. A woman while cycling in December, 1908, was knocked down and run over by a motor car. Her skull and clavicle were fractured. She was wearing a plate bearing four artificial teeth. This was missing from her mouth but two teeth and part of the plate were found in the car. What had become of the others was a mystery. She was discharged from hospital in January, 1909, and her recovery was so complete that she married in the following November. But ever since the accident she complained of throat symptoms. Three weeks ago she returned to the hospital, where she died this week. The post-mortem examination showed in the esophagus the missing piece of the plate with the two teeth attached, fastened deep in the tissues by its gold hook. Round this an abscess had developed which caused death.

Ophthalmology at Oxford

Oxford University was the first body in this country to grant a diploma in ophthalmology. Candidates must have taken courses of instruction in the university on the anatomy, physiology and diseases of the eye. The course of anatomy and physiology extends over two months and that on diseases of the eye over three months. Another feature of Oxford is the Congress of Ophthalmic Surgeons which is held annually. This year it will assemble at Keble College, July 20 to 22. The special feature of the congress will be operations for cataract and glaucoma, which will be performed by some of the most eminent specialists, among others, Professor Lagrange of Bordeaux, Professor Holth of Kristiania, Professor Heine of Kiel, and Colonel Herbert of Nottingham, who will each perform his own operation for glaucoma. Sir Anderson Critchett will operate for cataract and Major Gidney will perform the intracapsular cataract extraction practiced by Major Smith. A novel feature of the congress is that there will be no papers and discussion, but a series of demonstrations and exhibitions.

Visit of American Surgeons to England

A party of the members of the American Society of Clinical Surgery are making a tour of the principal surgical clinics of this country. They include Samuel Alexander, Kansas City; Willard Bartlett, St. Louis; Arthur D. Bevan, Frank Billings, M. L. Harris, J. B. Murphy and L. L. MacArthur, Chicago; Joseph A. Blake, George E. Brewer, Ellsworth Eliot, L. W. Hotchkiss and George Woolsey, New York; Ernest A. Codman, F. B. Lund, J. C. Munro and C. A. Porter, Boston; Gwilym G. Davis, C. H. Frazier, J. H. Gibbon, J. T. Hutchinson, Edward Martin, R. H. Harte and R. G. Le Conte, Philadelphia; John M. T. Finney and Harvey Cushing, Baltimore; Charles H. Mayo, Rochester, and Emmet Rixford, San Francisco. The tour in London includes visits to the following hospitals: St. Thomas's, King's, Middlesex, Guy's, St. Bartholomew's, London Temperance, National Hospital for Epilepsy. Mr. Makins, Sir Watson Cheyne, Mr. Bland Sutton, Mr. Arbuthnot Lane, Mr. Lockwood, Mr. H. Patterson and Sir Victor Horsley are doing the honors at the respective clinics. The Frimley Sanatorium for Consumptives and the Museum of the Royal College of Surgeons will also be inspected. From London the party will go to Edinburgh where they will visit the Royal Hospital Infirmary and the Hospital for Sick Children and be received by Mr. Alexis Thomson and Mr. Harold Stiles. Thence they will proceed to Newcastle and Leeds to visit the clinics of Mr. Rutherford Morison and Mr. Moynihan, and finally to Liverpool to the clinic of Mr. Robert Jones.

PARIS LETTER

(From Our Regular Correspondent)

PARIS, July 1, 1910.

Against Infant Mortality

The Ligue Contre la Mortalité Infantile has just held its first general assembly under the presidency of M. Mirman, director of public charities and hygiene at the Ministry of the Interior. Dr. Aviragnet, secretary of the society, read the general report, from which it appears that infants' consultations have been created within several years in 61 departments and are in regular operation in more than 380 localities. Dr. Aviragnet demanded that besides commercial milk there should be a specially controlled milk for infants and invalids, as in certain foreign countries. M. Mirman delivered an address on the means at the disposal of the government to combat infant mortality. He indicated that the Théophile Roussel law, which established medical supervision over children entrusted to hired nurses, affects annually only 170,000 children under 2 years. Since the births amount to almost 800,000 a year a great many young children are not under any medical supervision. The mortality of infants under a year increased in Paris from 1887 to 1891 to 299 per thousand. This rate diminished between 1901 and 1905 to 156 per thousand, that is to say, it decreased about 50 per cent. The same conditions are reported in other French cities having more than 30,000 inhabitants. In spite of this decrease infantile gastro-enteritis every year carries off tens of thousands of children.

The Reorganization of the Hospitals

Though France has the incontestable credit of founding charitable institutions at a very early period, as is proved by the old hospitals such as the Hôpital-Dieu at Paris, that of Lyons, that of Rheims, etc., at present most of our hospital buildings do not meet the demands of modern medicine and surgery. Accordingly the municipality of Lyons has decided to construct a model hospital for 1,200 patients, which is to contain also all the clinics of the Lyons college of medicine. Before executing this work the municipality sent a mission to study the German and Danish hospitals. M. Edouard Herriot, mayor of Lyons and member of the superior council of public charities, who headed the mission, has just made public his impressions on this journey. He learned much in Germany and became convinced of the archaic character of the French hospital organization and of the necessity for its complete reform. M. Herriot insists particularly on the fact that scarcely any French hospitals have enough isolation rooms, so that it is not rare to see the delirium of dying patients disturbing the physical and moral repose of their companions.

It is important, moreover, that the construction of a modern hospital should not be left to the architect, whose main concern is for beauty of line. The Virchow Hospital at Berlin, where so much progress has been realized, has suffered from this defect. The principles of construction should have been laid down by the physicians and surgeons. If at Paris the old Cochin Hospital possesses to-day a perfectly organized surgical service it is because Professor Quénu was able to collaborate constantly in the construction of the building for this service, which he directs.

A Proposed Remedy for Depopulation

Dr. Lannelongue, a professor at the Paris college of medicine and a senator, has just laid before the bureau of the senate a bill directed against depopulation. Among the first causes of the evil Dr. Lannelongue mentions prolonged or perpetual celibacy, late marriage, the excessive tendency to seek official life, the lack of testamentary liberty, the precarious situation of the salaried official, rural emigration, etc. The

slenderness of our birth-rate does not come, as one might believe, from purely physiologic causes. Statistics show that sterility has remained stationary; it amounted to 18 per cent. in 1856, and did not exceed 17 per cent. in 1891. If the birth-rate has diminished, it is not because the proportion of childless families has increased, but because the number of children in fecund families has diminished. The factors of weakness and of decadence against which it is necessary to strive for the conservation of the race and the future of the nation are the results of a more or less voluntary and deliberate limitation of the fertility of women which reduces the number of children to the minimum.

Dr. Lannelongue proposes a whole series of measures to combat depopulation. In the first place he proposes to lay supplementary military obligations from the age of 29 on celibates, who, since they do not fulfil the duty which they owe to the state of bringing children into the world, should have special obligations toward the national defense, from which married men and the fathers of families should be free. A proposition which will, no doubt, be considered audacious is that of requiring marriage of civil officials above the age of 25. Dr. Lannelongue, moreover, proposes certain pecuniary advantages during active service and at retirement for the benefit of civil employees who have not less than three living children. Finally, he proposes a modification of the civil code so as to give the father of a family absolute liberty in disposing of his patrimony, which will have the effect of dispelling the fear, too frequent among parents, of having to let their fortune be parceled out among a great number of children. The absolute right of testamentary disposition would, moreover, have the advantage of habituating young people to rely on their own intelligence and activities for their means of existence.

Election of Professor Roger to the Academy of Medicine

In its session of June 28 the Académie de Médecine elected a titular member in the section of pathologic anatomy in place of Dr. Malassez, who died last September. Dr. Henri Roger, professor of experimental pathology at the Paris college of medicine and physician of the Hôpital de la Charité, was elected.

BERLIN LETTER

(From Our Regular Correspondent)

BERLIN, June 23, 1910.

Centennial of the Berlin University

The program for the celebration of the university centennial is now settled. October 10 at 6 p. m. divine service will be held in the cathedral, at 8 p. m. a reception at the university and, following that, a torchlight procession. October 11 the first celebration will take place in the new aula and at noon there will be a banquet; October 12 a second celebration in the new aula, in the afternoon a garden festival in the exposition park and in the evening a "Kommers" of the student body in the exposition hall of the zoologic garden.

Sanitary Reports on German Southwest Africa

The first report of the experiences collected in regard to the military sanitation in German Southwest Africa from 1904 to 1907, during the Herero and Hottentot campaign is at hand, prepared by the commander of our defense army. In this report there are included communications regarding the sanitary corps, the organization of the sanitary service, the sanitary equipment and the aid of the sick. Among about 21,000 soldiers employed in the protective service, the sanitary corps consisted of 922 men, of whom 187 were sanitary officers. There was one physician to 120 men. Of the entire sanitary corps 41, or 4.7 per cent., died. Of these 12 fell in battle (5 sanitary officers and 7 assistants). In the sanitary service on the field a field hospital was erected only in large undertakings. Even the erection of a division hospital was generally impracticable on account of the peculiar style of fighting which endangered particularly those carrying the wounded. Clothing with corduroy and khaki gave good service. The entiré load of each foot soldier was about 52 pounds (26 kg). The food was often unsatisfactory. Many cases of scurvy necessitated the issue of chocolate, fruit juices, citric acid and condensed milk. Alcohol was often necessary on cold nights in the face of the enemy, while it was also evident that the effectiveness of the troops and their resistance to disease was not in the least diminished by involuntary abstinence from alcohol. Bathing was sometimes impossible for weeks on account of want of water. Clarification with alum and subsequent boiling sufficed for the purification of drinking water. Among the prisoners, a total of 15,000 Hereros and 9,000 Hottentots, infectious diseases were rife, especially dysentery, typhoid and syphilis (in the prison at Karibid 70 per cent. were syphilitic) and formed a constant danger to the troops. The care of the sick was the source of great difficulties; severely wounded patients with high fever had often to be transported on horses to which they were bound with thongs. It was necessary for the severely sick to remain often for days and weeks in ox carts.

Personal

Professor Krehl has unexpectedly declined the call to Leipsic as successor of Curschmann. It is confidently to be expected that at the next vacancy in a large university city (which may be Munich) Krehl will again be taken into consideration as the suitable successor.

Professor Döderlein of Munich has received a call for the position of Professor Olshausen. Döderlein was, as I have reported to you a few weeks ago, formerly on the appointment list of the faculty of the university of this city. It is doubtful whether he will accept the call; this depends on the action of the Munich authorities in providing the new building which he desires for his clinic. The Munich medical faculty has addressed a petition to the ministry to this effect and also the students made a visit to the department asking that Döderlein be retained in the university. It is to be expected that the Bavarian government will accept the ultimatum of Döderlein, and that the latter will remain in Munich. In that case the Prussian government will probably call Professor Hofmeier of Würzburg whom the faculty of the Berlin university nominated to the first place after the refusal of Krönig. As successor of the recently deceased Professor Zuckerkandl of Vienna, Professor Rabl of Leipsic was chosen, but declined.

Meeting of Tuberculosis Physicians in Carlsruhe

Early in June the seventh convention of the German tuberculosis physicians occurred at Carlsruhe and the proceedings were interesting with reference to the diagnosis, prophylaxis, and treatment of tuberculosis. Professor Feer, director of the Heidelberg pediatric clinic, reported his experience with the cutaneous and ocular tuberculin test; 2,000 children in his clinic were submitted to the von Pirquet test, in 86.7 per cent. of whom there was no suspicion of tuberculosis, in 4.8 per cent. there was suspicion, and 8.5 per cent. were clinically evidently tuberculous. In the first six months of life, 1.7 per cent. reacted positively, in the second six months, 7.3 per cent. Of 1,732 non-suspects none reacted positively up to six months of age; from six to twelve months, 3.4 per cent.; 1 to 2 years, 6 per cent.; 2 to 3 years, 11 per cent.; 3 to 5 years, 17 per cent.; 5 to 7 years, 22 per cent.; 7 to 10 years, 29 per cent.; 10 to 15 years, 38 per cent. According to Feer, the Pirquet test is specific, but with a very irritable skin the reaction may be simulated. In many cases of inactive tuberculosis, especially in children over 5 years of age, the reaction was positive at the second trial. Active tuberculosis very seldom gives a negative result with the cutaneous test. Feer never observed injurious effects. The positive result loses its value after the third to fourth year of life as it often occurs in the inactive form. On the other hand, the negative result is very significant. The ocular test was applied in 271 cases, only a single instillation of a drop of 1 per cent. of old tuberculin being made. Of 253 clinically tuberculous women a positive reaction was found in 22 per cent. of the 92 who showed a positive result by the Pirquet test. In 5 of the 101 positive ocular reactions severe conjunctivitis was observed. Dr. Roepke of Melsungen recommends an ambulant tuberculin treatment for patients after the usually too short sanatorium treatment. In his opinion the tuberculin preparations afford the only specifically active remedies. He recommends the gradually progressive method avoiding reactions as far as possible. In this way the occupation is as a rule not disturbed. Dr. Koppert in the sanatorium treatment favors rest and protection for the patients at first, especially by treatment in recumbency, but later he introduces systematic exercises for the increase of the resisting power and self-confidence of the patient. By confinement to bed a weakening of the entire musculature of the body is easily produced; this inconvenience is mitigated or removed by walking exercises, systematic muscular work, etc. The period of employment must not exceed 2 to 4 hours daily. Dr. Junker also recommends a systematic employment in the popular sanatoria, especially by garden work and agricultural labor and by housework for women. Professor Starck (Carlsruhe) treated the subject of tuberculosis and pregnancy. Among about 65,000 pregnant women 1.6 per cent. were found tuber-

culous. Here, however, only severe cases appear to have attracted attention and the mild cases presented no striking symptoms, so that it may be concluded that very light cases are little influenced by pregnancy. He found in his material that about one-fourth of all the cases of tuberculous pregnant women first showed evident symptoms during pregnancy. Severe forms become aggravated in the course of a pregnancy without exception, but mild forms often bear it remarkably well, although the prognosis must always be uncertain. Pulmonary tuberculosis complicated by laryngeal tuberculosis during pregnancy render the prognosis still more unfavorable. As to the influence of tuberculosis on the pregnancy, it appears that in general abortions are not more common than among non-tuberculous women. Premature birth occurs, however, oftener in cases of severe tuberculosis. The influence of the mother's tuberculosis on the fetus may be exerted in three ways, by intrauterine infection (which is very rare), by the weakened constitution of the prematurely born child, and by the inherited predisposition. The therapy of tuberculous pregnancy is essentially prophylactic. Tuberculous girls must be warned against marriage. After recovery from tuberculosis permission to marry must be granted only after the expiration of from two to three years. When tuberculosis occurs in a married woman, conception must be prevented if possible. Starck does not advise the induction of premature labor in a tuberculous pregnant woman, because he considers it as injurious for the tuberculous patient as delivery at full term. On the other hand, the earliest possible abortion has a favorable influence on the course of the tuberculosis. The complication with laryngeal tuberculosis is an unconditional indication for abortion in the first few months.

VIENNA LETTER

(From Our Regular Correspondent)

VIENNA, June 23, 1910.

The Tuberculous Patient and the Austrian Law

The increasing vigilance with which the public is watching the spread and prevention of tuberculosis has caused a physician to compile the present regulations of the Austrian law, in regard to tuberculosis. The law justifies the breaking of an engagement of marriage by either party if the other is found out to suffer from active tuberculosis. If, however, tuberculosis becomes manifest or recognized only after the wedding the marriage is valid. On the principle that damages can be claimed from the party responsible for the loss, landlords are entitled to have the flat from which a tuberculous patient has moved disinfected at the expense of the patient. Public spitting may be, and has been prohibited, and a fine, sometimes very high, may be imposed if the law is transgressed. Private corporations have sometimes obtained damages on this ground. Children suffering from tuberculosis are not allowed to visit public schools, except for examinations. A movement is now on foot to establish special classes for tuberculous children, in spite of medical remonstrations against the necessity of keeping such children in school at all. A tuberculous teacher is strictly forbidden to continue his occupation. A tuberculous prisoner may claim postponement of his term of imprisonment, and a recruit is entitled to a leave of one to three years, or, if after his twenty-fourth year, he still is suffering from demonstrable illness, he has to be dismissed. Interesting disputes under the claim of workmen's compensation have been brought to the courts when laborers have contracted the disease while engaged in certain kinds of work under conditions favorable to infection. As a rule, the attitude of the courts of law is not very favorable in this respect to the employed persons. The attempt has been made, but as yet unsuccessfully, to make tuberculosis a notifiable disease, according to the terms of the public health bill now under consideration, and to provide that in order to obtain the marriage license, both parties shall produce a certificate of health, especially of freedom from tuberculosis. This summary of legal provisions bearing on disease is, of course, not exhaustive, but only those that are most likely to occur in every-day life.

MANILA LETTER

(From Our Regular Correspondent)

MANILA, May 31, 1910.

Infant Mortality

Widespread interest is shown in Manila in the present campaign against the existing high mortality among infants and children. It is not uncommon to notice in the daily health reports of Manila such statistics as these: Total deaths for the day 25, infants 18, or total deaths 15, infants 11. The chief cause of this high death rate is universally considered to be improper environment, care and feeding. Both Filipino and American physicians are actively engaged in combating such a disproportionate mortality of babies. Among the Filipino physicians Dr. Calderon, recent delegate to the International Congress of Tuberculosis at Washington, is the most actively engaged in this work. The Bureau of Health and the Manila Medical Society are also lending their aid. Appeals are frequently made through the daily press and the public are quite well aware of the condition of affairs. This, however, is of no particular significance to the vast majority of Filipinos, who are quite accustomed to it. In fact in the old days before American sanitation was established the death-rate among the babies was, if we can trust the meager statistics available and the memory of the oldest residents, even much greater than it is to-day. Most of the burden of this work naturally falls on the Americans and the few more intelligent Filipinos; since, for reasons stated above, the great mass of the population can hardly be expected to aid, and the foreign residents (English, German and Spanish) who remain more or less segregated and who as a rule have no interest in the welfare of the islands except in a commercial sense, have not proved very charitable.

If the vital statistics of the Bureau of Health of the Philippine Islands be studied it will be seen that, but for the great mortality of infants and children, the health of Manila will compare favorably with that of any American city of like size. There are fewer deaths from pneumonia, diabetes, typhoid and heart disease than is the rule in American cities of 250,000 inhabitants. The sanitary conditions are excellent. Pure water is to be had at a slight cost and the climatic conditions are never excessive. In view of these conditions the medical profession of Manila has set itself to the task of looking into the conditions obtaining in the home of the average Filipino mother and to ascertain the cause for such a high death-rate among the babies.

Accordingly the American Association for Study and Prevention of Infant Mortality was organized and held its first meeting last November. At the close of the four days' session resolutions were adopted stating that the present high rate of infant mortality is due to inherent debility or disease, improper environment and care, improper feeding and communicable diseases, and is to a high degree preventable; that the breast feeding of infants is, when possible, the only proper method; that the reporting of all communicable diseases, especially of those commonest in society, to health boards, should be compulsory; and that the scientific instruction of the young in practical hygiene and sanitation, and of mothers in the care and rearing of infants is an important duty resting chiefly on physicians, sociologists, school authorities and boards of health. The Bureau of Health and prominent native physicians and many Americans have been making efforts to supply proper nourishment in the homes of the classes through the Gota de Leche, an organization which is taking charge of most of the charities for the relief of the babies.

Inspection of Meats

The Bureau of Health and the Bureau of Agriculture have recently joined forces in instituting a rigid inspection of all meats entering Manila from a foreign country. The two bureaus are to cooperate in this inspection and the Bureau of Science has offered to analyze any suspicious specimens sent to it by the meat inspectors. Live animals shipped into the islands for food are also subjected to a rigid inspection before being allowed to land and are held in quarantine on the least provocation. Thus by a system of double inspection, one abroad and one before landing, sound meat is practically assured the people of Manila.

Meeting of Far Eastern Association of Tropical Medicine

The first biennial meeting of the Far Eastern Association of Tropical Medicine was held at Manila, P. I., the first week in April. [As noted in THE JOURNAL, May 18.—ED.] The congress was attended by seventy six medical men engaged in professional work in the far east, including the official delegates from the governments of India, Ceylon, Siam, Netherlands, India, the Federated Malay States, the Straits Settlements, Hongkong, the Philippine Islands, Tsingtau and Japan. There were eight scientific meetings. With the exception of the final meeting, which was held at Babuio, the new summer capital of the islands, all the meetings of the congress were held in the administration building of the new General Hospital of Manila.

The general run of the papers was good and most of them were of a high standard.

Among those of more than a local or more than a tropical interest may be mentioned one by Dr. S. Purdy of Auckland, New Zealand, on "Flies and Fleas as Factors in the Dissemination of Disease." From his experience in India and Egypt he is led to place particular emphasis on the danger of flies, especially in disseminating cholera and typhoid fever. He spoke favorably of the effects of petroleum in killing flies in the larval stage.

In connection with the subject of the notification of diseases in Manila a valuable paper was read by Dr. Maclachlan of the Bureau of Health and Dr. Andrews of the Bureau of Science, entitled "Studies in Infantile Mortality." It was a record of a verification of the causes of death as registered at the ordinary registry offices. The deaths of ninety-two infants under one year of age were verified, as to the cause of death, by post-mortem examination. It was found that out of the ninety-two cases, taken at random, 47 per cent. were due to infantile beriberi. Despite any doubt as to the validity of the diagnosis in any of these cases, it would still seem evident from the statistics furnished that the greater portion of the deaths of infants in Manila, as in most of the cities of Siam, India, Japan, etc., is due to digestive troubles arising from improper feeding. It was further shown that the deaths of children under 1 year in the Philippines amounts to 48.8 per cent. of the total deaths recorded.

The largest attendance occurred on Friday, when the subject of beriberi was brought up for discussion. This is a topic of widespread medical interest in the far East, especially in the tropics. Papers were read on "The Cause of Beriberi," by Dr. J. de Haan, delegate from Netherlands, India, and Dr. H. Fraser, delegate from the Federated Malay States; on "Beriberi in Siam," by Dr. Highet, delegate from the Government of Siam; on "Food and Metabolism in Beriberi," by Dr. Hans Aron; and on "The Etiology of Beriberi," by Dr. E. Musgrave of the Bureau of Science. An interesting point about these papers is that from each of those districts evidence was brought forward to show that beriberi is closely associated with the continuous consumption of white polished rice as the staple article of diet. In reviewing past work on beriberi, Dr. de Haan showed that the idea of this disease being caused by a bacterium is untenable, that it is a food disease, and that in Netherlands, India, it had been found that it could be kept very much in abeyance by adding to the white rice diet a form of green pea which is called "Katchang idj-ju." The indications are that unpolished rice or rice milled by the native crude method does not give rise to beriberi. The explanation is, that in polishing rice the outermost layer of cells, which contain most of the fat and phosphorus, is polished off and it is the lack of these constituents which gives rise to beriberi.

At the concluding meeting of the association, Dr. Clark, who is the Medical Officer of Health of Hongkong, extended a cordial invitation from the government of Hongkong to the Far Eastern Association of Tropical Medicine to meet there in 1912. The invitation was endorsed not only by the government but also by the British colonial office. The association accepted the invitation with acclamation. Dr. Atkinson of Hongkong was elected president. The following vice-presidents were elected: Sir A. Perry (Colombo), Dr. de Haan (Netherlands, India), Dr. Ellis (Straits Settlements), Dr. Highet (Siam), and Dr. Shibayama (Japan).

Miscellany

Cardiac and Respiratory Failure Associated with Engorgement of the Thyroid.—In a discussion on lymphatism (*Proc. Roy. Soc. Med.*, March, 1910) Mr. Carter Braine reported a case of cardiac and respiratory failure, during an operation for the removal of an abdominal tumor. The failure seemed to be due to an engorgement of the thyroid gland, which previous to the operation had seemed to be normal. The patient was an emaciated woman, aged 24, extremely nervous and with a rapid pulse. Ethyl chlorid followed by ether was used. The patient was placed in the Trendelenburg position and the abdomen opened. The operator requested that the patient be relaxed a little further on account of rigidity of the recti; at this time the pupils were dilated and a light-reflex was present. On pushing the anesthesia a little further the pulse became feeble, the pupils were still very large and a doubtful corneal reflex was present. There had been no traction on the abdominal contents. Respirations became very shallow; the anesthetic was stopped and chest compressions employed to assist respiration. Breathing ceased, however. There had been no cyanosis, no stertor; the color was ash-grey and the pulse imperceptible at the wrist. Artificial respiration and oxygen were employed and persevered in, although the patient was considered by all present to be dead. The tongue was well forward and had given no trouble. It was then noticed that the thyroid was swollen, the two lateral lobes and the isthmus being well-marked. The anesthetist was absolutely certain that this swelling was not present before the anesthetic was commenced. The patient had been removed to the floor to facilitate the employment of artificial respiration. Believing that the inability to restore the respiration might be due to the swelling of the gland the head was raised from the floor and slightly flexed on the sternum and artificial respiration continued in this position. In a few minutes the pupils commenced to contract, a thready pulse returned, and respiration became reestablished. Strychnin was given, the patient placed on the table and the operation completed under light anesthesia with the patient in the horizontal position. The patient was returned to her bed with color and pulse good and no trace of the swelling of the thyroid could be discovered. Though perhaps rare, this possibility should be kept in mind in respiratory and cardiac failure during anesthesia, and it should be borne in mind that in status lymphaticus the thymus might also become engorged, giving rise to reflex cardiac inhibition or respiratory stasis.

Variation in the Inherent Phagocytic Power of Leucocytes.—The opsonic index, according to E. E. Glynn and G. L. Cox (*Jour. Path. and Bacteriol.*, 1909, xiv, 90), as determined by the Wright technic, does not necessarily represent the true index of the power of phagocytic response of the blood of any given individual. In determining the opsonic index of a given patient's blood, Wright and his school do not take into account the possibility that there may be differences in the phagocytic power of various strains of leucocytes, as well as in the different types of leucocytes themselves. Wright himself said, "It clearly emerges that the phagocytic count is uninfluenced by the corpuscle employed. . . . It will make it clear that we may take the opsonic index of any blood as an index of the patient's power of phagocytic response." From their observations on human beings, Glynn and Cox are led to take exceptions to this doctrine. They find that both serum and leucocytes are subject to change, so that both must be taken into consideration in estimating the extent of phagocytosis of a given blood. They claim to have shown that "there may be a marked and often very constant difference in the phagocytic capacity of various strains of polymorphonuclear leucocytes. These differences may be apparent not only in pathologic blood, but also in normal blood. The opsonic index does not necessarily coincide with the index obtained by mixing a person's own leucocytes with his own serum. The extent of the phagocytosis obtained when washed leucocytes and serum from the same individual are incubated together can be correctly estimated by separately measuring the proportions due to the serum and washed leucocytes respectively. The inherent phagocytic power of the leucocytes of different individuals towards bacteria may tend to be constantly below a given standard, not only in disease but to a lesser extent in health. The phagocytic power of different leucocytes is subject to variations in the same individual which are at least as marked as those in the amount of opsonin (in undiluted serum), but there is no evidence that the variations are specific in the uninfected."

Mission Hospital Patients in Turkey.—Dr. C. D. Ussher, a medical missionary in Van, Turkey, writes that people in America would undoubtedly flee the dispensary connected with his hospital if they should see the patients. He says: "Picture them brought in among the crowd; smallpox cases in every stage, papules, vesicles, pustules and scabs; famine, scarlet fever, diphtheria, measles and whooping-cough. If you talk to the friends about microbes and infection, many either look at you nonplussed or assure you that there are no

microbes on them, they had a bath a month or two ago or 'last Easter.' Those whose friends are able to care for them properly are sent home and those most needy are sent to the hospital if there is room for them. Yes, smallpox, scarlet fever, typhus, typhoid, and all are sent to our one and only hospital, and it takes much labor and expense in washing, bathing and disinfecting to prevent infection of others." The hospital is a three-story building, 50 by 70 feet, with four general wards and nine private wards, one of which with two beds is used for contagious diseases when cases are few.

Cradling in Treatment of Strangulated Hernia.—In a communication in the *Progrès Médical*, March 19, 1910, M. de la Roquette refers to a case recently reported in which strangulated eventration became spontaneously reduced as the patient's head was kept constantly lower than the pelvis. He then reports a case from his own experience in which an irreducible strangulated hernia gave rise to such threatening symptoms that the patient was taken at once to the nearest hospital, but this was miles away and the patient had to be carried down in the native (Chinese) litter which is suspended at the head and foot from the center of a crossbar borne on the shoulders of two men. The continuous swaying resulted in the spontaneous reduction of the hernia in this case, and he suggests that some such cradling device might be systematically applied in treatment of strangulated hernia.

Aneurism of the Vertebral Artery and Celiac Axis.—A man, aged 57, had complained of neuralgic headache at intervals for six years (Longcope: *Proc. Path. Soc., Philadelphia*, February, 1910). Six days before admission to hospital the pain became worse and the patient fell unconscious, remaining so for thirty minutes. When he recovered consciousness his right foot was paralyzed, and on admission to the hospital he had fever, retraction of the head, paralysis of the right foot and delirium. Six lumbar punctures were performed and pure blood was obtained each time. The patient died of pneumonia. Autopsy revealed a ruptured aneurism of the vertebral artery. In the celiac axis there was a nodule which was thought to be a thrombus, but which when dissected away was found to be a true dissecting aneurism.

Marriages

EDWARD PATERA, M.D., to Miss Jane Smyth, both of Chicago, July 2.

JOSEPH ISAAC KEMLER, M.D., to Miss Rebecca Macht, at Baltimore, June 29.

J. PAGE STRONG, M.D., to Miss Camilla Lucille Gordon, at Baltimore, June 29.

WILLIAM HARRIS, M.D., to Miss Julia L. Shrotz, both of Philadelphia, June 28.

JOHN A. C. TULL, M.D., Atlantic City, N. J., to Miss Lyons at Guelph, Canada, recently.

WALTER F. NUZUM, M.D., Spokane, Wash., to Miss Martha Kilian of Baraboo, Wis., June 23.

THOMAS G. MCLIN, M.D., to Miss Nena E. Inskeep, both of Fairfield, Ill., at Chicago, June 24.

FRANKLIN HAROLD CRAIL, M.D., East Las Vegas, N. M., to Miss Laura Hallock of Denver, June 28.

LUTHER GOULD DEARBORN, JR., M.D., Derry, N. H., to Miss Luella Fitch of Cambridge, Mass., June 8.

MOSES P. RUCKER, M.D., Bedford City, Va., to Miss Mary P. Williams of Fredericksburg, Va., June 27.

WILLIAM RICHARD ARTHUR, M.D., Greene, Iowa, to Miss Hazel Claire Loomis of Des Moines, June 30.

KUNO HERBERT STRUCK, M.D., Davenport, Iowa, to Miss Norma Little Petersen of Iowa City, June 23.

FARQUHARD CAMPBELL, M.D., to Miss Maude Barbour, both of Kansas City, Kan., at Leavenworth, Kan., June 25.

JESSE NEWTON HILL, M.D., Osawatomie, Kan., to Miss Minnie Grace Kinman of Pleasant Hill, Mo., June 23.

GEORGE M. JENNINGS, M.D., Missoula, Mont., to Miss Sabra Swenson of New London, Minn., in Minneapolis, June 8.

WILLIAM HENRY DONOVAN, M.D., Iowa City, Iowa, to Miss Josephine M. Barry of Monticello, Iowa, at Iowa City, June 22.

Deaths

Henry Harris Aubrey Beach, M.D. Harvard Medical School, Boston, 1868; a member of the Massachusetts Medical Society; Boston Society for Medical Science, the Society for Medical Improvement, and the Society for Medical Observation; formerly demonstrator of anatomy and instructor and lecturer on surgery in Harvard Medical School; for two years associate editor of the Boston Medical and Surgical Journal; died at his home, June 28, aged 66.

Clement Bloch, M.D. University of Koenigsberg, Germany, 1890; a member of the German Medical Society; for five years head physician of the Montefiore Home; visiting physician to the Polyclinic Hospital and Mount Sinai Hospital, and physician to Sydenham Hospital, New York City; died at his home in that city, July 3, from heart disease, aged 46.

Charles Zellhoefer, M.D. New York University Medical College, New York City, 1873; a member of the Medical Society of the State of New York; consulting physician to the German, Eastern District and St. Catharine's Hospitals, Brooklyn; died at his home, June 30, from heart disease, aged 65.

George Glick, M.D. Eclectic Medical Institute, Cincinnati, Ohio, 1849; for many years president of the First National Bank, ex-postmaster, member of the city council and school board of Marshalltown, Iowa; died at the home of his daughter in Chicago, June 26, from paresis, aged 83.

Edward Jerome Page, M.D. Louisville (Ky.) Medical College, 1874; Jefferson Medical College, 1883; a member of the Oregon State Medical Association, and the Southern Oregon Medical Association; president of the Commercial Bank of Oakland; died at his home in that city, July 1, aged 60.

Alfred Willard Southgate, M.D. Harvard Medical School, Boston, 1905; a member of the Massachusetts Medical Society; a member of the staff, and for two years house surgeon of the City Hospital, Worcester; died in that institution, June 25, from tuberculosis, aged 31.

Charles B. Richmond, M.D. Northwestern University Medical School, Chicago, 1878; a member of the American Medical Association; for thirty years a resident of Colorado and twenty-one years a practitioner of Denver; died at his home in that city, July 1, aged 56.

Simon B. Beer, M.D. Eclectic Medical Institute, Cincinnati, Ohio, 1874; of Fairview, Ill.; served in the One Hundred and Third and Thirty-sixth Illinois Infantry throughout the Civil War; died in a hospital in Peoria, June 23, following an operation, aged 72.

James Robertson Ely, M.D. University of Louisville (Ky.) Medical Department, 1859; a member of the Kentucky State Medical Association; formerly of Frankfort, Ky.; died at the home of his son-in-law in Tryon, N. C., June 19, from sepsis, aged 74.

Daniel A. Sheffield, M.D. Northwestern University Medical School, Chicago, 1867; Rush Medical College, Chicago, 1886; formerly of Apple River, Ill.; died at the home of his daughter in Lamont, Iowa, June 25, aged about 80.

Joseph F. Koerper, M.D. Philadelphia College of Medicine and Surgery, 1852; a member of the Medical Society of the State of Pennsylvania; died at his home in Philadelphia, March 18, from senile debility, aged 79.

Joseph Hark, M.D. Franklin Medical College, Philadelphia, 1848; a retired practitioner of Bethlehem, Pa.; died at the home of his grandson in Bethlehem, June 18, from fatty degeneration of the heart, aged 91.

Addison Norvel Nuckols, M.D. Medical College of Virginia, Richmond, 1870; a Confederate veteran; a resident of Danville, Va., until two years ago; died at his home in Lynchburg, June 9, from apoplexy, aged 66.

Robert Edward Emmett Burke, M.D. University of Louisville (Ky.) Medical Department, 1905; formerly intern at the City Hospital, Louisville, Ky.; died at his home in that city, June 28, from tonsilitis, aged 26.

Edwin Drake Van Deventer, M.D. Missouri Medical College, St. Louis, 1881; a member of the Missouri State Medical Association; of Laddonia, Mo.; was struck and killed by a Chicago & Alton train, July 4, aged 51.

John Philip Harrell, M.D. Keokuk (Iowa) Medical College, 1892; a member of the Iowa State Medical Society; formerly city physician of Burlington, Iowa; died at Mercy Hospital in that city, June 28, aged 42.

William Lobdell Johnson, M.D. Albany (N. Y.) Medical College, 1865; a member of the Medical Society of the State of New York; died at his home in Johnstown, June 26, from chronic gastritis, aged 66.

Charles DeWitt Early, M.D. Rush Medical College, Chicago, 1901; formerly county physician at Peoria County, Illinois; died suddenly while seated in a chair at the Elks' Club, Peoria, July 5, aged 32.

Walter William Snyder, M.D. Starling Medical College, Columbus, Ohio, 1901; a member of the Ohio State Medical Association; was found dead at his home in London, Ohio, June 26, aged 34.

Clarence Roberts Campbell, M.D. College of Physicians and Surgeons, Baltimore, 1906; of New Bedford, Mass.; died at the home of his brother in Provincetown, Mass., June 19, from pneumonia.

Donald Alex. McDonald, M.D. University of Michigan, Department of Medicine and Surgery, 1876; of Detroit, Mich.; died in Rochester, Minn., May 29, from gastric ulcer, aged 50.

Charles L. Sonnemann, M.D. Northwestern University Medical School, Chicago, 1894; of Milwaukee, Wis.; died at the home of his brother-in-law, June 23, of nephritis, aged 41.

Richard Joseph Nunn, M.D. Savannah (Ga.) Medical College, 1854; a member of the Medical Association of Georgia; a Confederate veteran; died at Savannah, Ga., June 30, aged 79.

Frank B. Dodge, M.D. College of Physicians and Surgeons, Baltimore, 1880; a resident of Mount Morris, N. Y., for twenty-eight years; died at Fresno, Cal., June 22, aged 70.

Benjamin Franklin Daniel, M.D. Atlanta (Ga.) Medical College, 1887; formerly of Union Point, Ga.; died at his home in Decatur, Ga., June 27, from tuberculosis, aged 60.

John Waters Deshon, M.D. Bellevue Hospital Medical College, New York City, 1891; formerly of Little Rock, Ark.; died at Tulsa, Okla., July 3, from heart disease, aged 57.

John Whitehead Seidell, M.D. Atlanta (Ga.) College of Physicians and Surgeons, 1907; died at his home in Nichols, Fla., June 16, from typhoid fever, aged 28.

David Findley (license, Iowa, 1886); a practitioner of Cass County, Iowa, for forty-seven years; died at his home in Atlantic, June 28, from senility, aged 80.

Oliver H. Caldwell, M.D. Memphis (Tenn.) Hospital Medical College, 1882; a veteran of the Civil War; died at his home in West Paris, Texas, June 28, aged 78.

Thomas M. Young, M.D. Chicago Homeopathic Medical College, 1880; a veteran of the Civil War; died at his home in Seattle, Wash., July 1, aged 68.

John B. Heck, M.D. Louisville (Ky.) Medical College, 1874; formerly postmaster of Dayton, N. M.; died at his home in that place, recently, aged 60.

Sebastian Cabot Lewis, a resident of Kerens, Texas, for twenty-two years; died at that place, June 21, from senile debility, aged 91.

Samuel H. Decker (license, Pa., 1891); formerly of Benezett, Pa.; died at his home in Kersey, Pa., April 7, from pneumonia, aged about 65.

Elizabeth Short, M.D. Woman's Medical College, Kansas City, Mo., 1898; died at her home in Kansas City, July 1, aged 44.

Sylvanus F. Heath, M.D. Harvard Medical School, Boston, 1866; died at his home in Gilman, Ill.; June 16, aged 71.

Pharmacology

QUININ ARSENATE REFUSED RECOGNITION

Report of the Council on Pharmacy and Chemistry

The advisability of admitting quinin arsenate as a non-proprietary article to New and Nonofficial Remedies was taken up for consideration by the Council and the product was referred to a committee on chemistry. This committee recommended that the opinion of the staff of clinical consultants should be obtained relative to the value of this product. This was done and on the staff's recommendation the drug was refused recognition and the Council ordered the following statements to be published.

W. A. PUCKNER, Secretary.

Quinin arsenate is the secondary quinin salt of arsenic acid. It contains 8 per cent. of elementary arsenic and 69 per cent. of anhydrous quinin. 0.1 gm. (1½ grains) would be equivalent to approximately .092 gm. (1 9/20 grains) of quinin sulphate and to 0.032 gm. (½ grain) of sodium arsenate (five times the official dose). It is thus seen that the proportions of the two chief ingredients in the salt are such that an efficient dose of quinin cannot be given in this form without introducing a dangerous amount of arsenic. As it does not appear that this preparation possesses any properties that might not be found in a mixture of quinin salts and various preparations of arsenic, and as it has no advantage over other forms of arsenic now available there is no reason for including it among unofficial non-proprietary remedies. Attempts to substitute it for other quinin salts would be likely to lead to overdosing with arsenic.

THE DEADLY HEADACHE POWDER

Two Widely Advertised Nostrums Add to Their Mortuary Lists

Yet another death is recorded from the use of the deadly "headache powder." According to the reports, Mrs. Lena Shepland, Hastings, Neb., having a headache, took a dose of bromo-seltzer; this not giving the desired relief, she also took a dose of antikamnia. An hour later she was dead from heart failure induced by these heart-depressing nostrums.

The *Hastings Daily Tribune* in reporting this case demonstrates the change that the daily press has undergone in the past five years. Not only do the names of the nostrums appear in the report but also in large type in the heading. This seems to show that the Proprietary Association of America is losing its grip on the press. Five years ago it would have been hard to find a paper that would have dared to give a nostrum such unenviable notoriety as this Nebraska paper forces on bromo-seltzer and antikamnia.

RADAM'S MICROBE KILLER

A correspondent asks for information concerning "Radam's Microbe Killer," as he has a patient with cancer whose family are strongly urging the use of this nostrum.

"Radam's Microbe Killer" was shown up by Mr. Adams in his "Great American Fraud" series and also in the report of the Australia Royal Commission. This nostrum had a great vogue some years ago and then seemed to drop out of notice; apparently, however, it has been revived recently and is being pushed vigorously, especially in New York City and on the Pacific coast. A few months ago the federal government seized a consignment of this preparation (see THE JOURNAL, May 14, 1910) and served notice on the firm in whose possession it was found. The court decided that the product should be destroyed and that the firm in question shall pay all the costs of the proceedings. The "Notice of Judgment" published by the government did not give in detail the results of the government analysis, but application to the Department of Agriculture regarding the composition of this nostrum brought the following letter:

"The acting secretary has officially authorized giving you the information relative to the composition of 'Radam's Microbe Killer.' The results are as follows:

"Sulphuric acid	0.59 per cent.
"Sulphurous acid	0.016 per cent.
"Inorganic matter (ash)	0.013 per cent.
"Water by difference	99.381 per cent.

"The above clearly shows that 'Radam's Microbe Killer' is a mixture of sulphuric acid and sulphurous acid dissolved in ordinary hydrant water. It is quite possible that the sulphuric acid may have been present in part as sulphurous acid."

A REDISCOVERY

Fifteen years ago THE JOURNAL ceased to carry the advertisement of antikamnia; ten years ago it called attention to the fact that this nostrum was being advertised to the laity by means of circular letters; since that time it has persistently exposed the devious ways in which the exploiters of this dangerous powder have humbugged the medical profession and

the public. Some other medical journals, notably the *Medical World*, have enlightened their readers on the same subject. It can hardly be said, therefore, that the medical profession was unaware of the "heads I win, tails you lose" policy of the Antikamnia Chemical Company.

Apparently, however, our friends the druggists, were unaware of the machinations of the Antikamnia people. This, at least, is what we are led to believe by a letter which has recently been sent to physicians by the committee on the U. S. P. and N. F. propaganda of the Chicago branch of the National Association of Retail Druggists. With its own letters calling attention to the way in which physicians have been made the catspaw of the proprietary interests, this committee sends a facsimile letter of the "Do-you-suffer-pain?" letter which the Antikamnia people have been scattering among the laity for years.

This change in attitude on the part of the N. A. R. D. is encouraging. It is less than five years ago that the Antikamnia Chemical Company sent "as a Thanksgiving Offering to the National Association of Retail Druggists, our check for the sum of five hundred ($500.00) dollars." This money the N. A. R. D. gratefully received and acknowledged with the statement that the Antikamnia Company deserved great credit for realizing "that the retail druggist is, after all, the best friend of the proprietary manufacturer." And at the time this "honorarium" was accepted by the N. A. R. D. these same "Do-you-ever-suffer-pain?" letters had been going to the public for over five years. Reforms come slowly, however, and it is sufficient to be thankful for them when they arrive. The medical profession should appreciate the present attitude of the N. A. R. D. toward at least one of the "ethical" nostrums even though that attitude is brought to their attention in the form of a discovery at least a decade old.

Correspondence

Treatment of Burns; Correction of a Prescription

To the Editor:—In my paper on "Rational Treatment of Burns" (THE JOURNAL A. M. A., July 2, p. 27), an error [Our error.—Ed.] exists in regard to the strength of the picric acid solution. The prescription as used by me and given in my manuscripts is as follows:

	gm. or c.c.	
Picric acid	4	ʒj
Alcohol	64	ʒ ji
Water q. s.	768	O jss

Please make this correction in THE JOURNAL, as serious results might follow the use of a picric acid solution as strong as the one erroneously printed in my paper of the above date.

H. L. FANCHER, M.D., Chattanooga, Tenn.

Bismuth Subnitrate Superior to Bismuth Milks

To the Editor:—There are a number of bismuth preparations on the market put out by manufacturing chemists in the shape of bismuth creams, milks, etc., purporting to have the same field of usefulness in gastrointestinal disorders as bismuth subnitrate. I believe these preparations are made from the oxid and while, from a pharmaceutical standpoint, they seem to leave nothing to be desired, clinically, I am convinced, they are well nigh worthless, at least in infants.

In a series of observations covering their administration to twenty-one infants suffering from acute gastroenteric conditions, I failed to observe a sedative or astringent action in a single case. In 21 cases I gave four ounces of a well-known bismuth milk in thirty-six hours to infants suffering from gastroenteritis, with frequent stools containing some blood and abundant mucus, without the slightest appreciable effect in the character or frequency of the stools notwithstanding the fact that milk feeding was entirely withheld during this treatment for a period of seven days. The bismuth milk passed through the entire alimentary tract practically unchanged and appeared in the stools as a white semi-solid mass. Bismuth subnitrate was now administered in 10 gr. doses every two hours resulting in darkened stools, lessened amount of blood and almost complete disappearance of mucus within the first twenty-four hours of its administration.

JUDSON A. HULSE, M.D., Akron, Ohio.

The Public Service

Medical Department, U. S. Army

Changes for the week ended July 9, 1910:

Slater, E. F., M. R. C., granted 12 days' leave of absence about Aug. 15, 1910.

Fisk, Owen C., M. R. C., ordered from Fort Crook to Fort Omaha, Neb., for temporary duty.

Roberts, William M., major, left Fort Thomas, Ky., en route to Camp at Gettysburg, Pa.

Gosman, George H. R., major, reported for duty at Chickamauga Park, Ga.

Smith, Allen M., major, left Washington, D. C., on 30 days' leave of absence.

Hammond, William G., dental surgeon, relieved from duty in the Philippines Division and directed to sail on transport to sail from Manila, P. I., about Sept. 15, 1910, to San Francisco. Dental Surgeon Hammond will proceed thence to his home and on expiration of the leave of absence granted him this date will report to the Surgeon General of the Army for annulment of contract. Leave of absence for 3 months, to take effect on arrival in the United States, is granted.

Mills, Frederick H., M. R. C., granted 4 months' leave of absence about Sept. 15, 1910.

Gray, William W., col., leave of absence extended 1 month.

Harris, Herbert I., M. R. C., granted leave of absence for 1 month and 15 days.

Register, Edward C., M. R. C., assigned to permanent duty at Fort H. G. Wright, N. Y.

Adams, Paul A., M. R. C., died at Scofield Barracks, H. Ty., July 3, 1910.

Baker, David, major; Darby, Taylor E., lieut.; Northington, E. G., M. R. C., report arrival at Chickamauga Park, Ga.

Kramer, Floyd, lieut., left Fort Robinson, Neb., en route to Fort D. A. Russell Target and Maneuver Reservation, Wyo., for duty.

Brown, Henry L., capt., reported for duty at Chickamauga Park, Ga.

Griswold, W. C.; Meterick, R. H., M. R. C., left Fort Oglethorpe, Ga., en route to Camp of Instruction, Chickamauga Park, Ga.

Gunckel, George I., dental surgeon, en route to Fort McPherson, Ga., from temporary duty at Fort Screven, Ga.

Mount, J. R., lieut., reported for duty at Camp Dickinson, Chicago.

Brooks, William H., major, ordered to Columbus Barracks, Ohio, for temporary duty. Major Brooks to be relieved from duty at Presidio, San Francisco on completion of temporary duty at Columbus Barracks, Ohio, and will then proceed to Recruit Depot, Fort McDowell, Cal., for duty, relieving Lieutenant Colonel Euclid B. Frick, Medical Corps.

Frick, Euclid B., lieut. col., on being relieved from duty at Fort McDowell, Cal., will proceed to and take station at the Presidio of San Francisco.

Medical Corps, U. S. Navy

Changes for the week ended July 2, 1910:

Sellers, F. E., P. A. surgeon, detached from duty at the Naval Station and Naval Recruiting Station, New Orleans, and ordered to the Naval Station, Guam, M. I.

Dunn, H. A., P. A. surgeon, ordered to duty at the Naval Medical School Hospital, Washington, D. C.

Stepp, J., P. A. surgeon, ordered to the *Wabash*.

Wheeler, L. H., P. A. surgeon, detached from the *Marietta* and ordered to the *Virginia*.

Stritel, C. E., P. A. surgeon, discharged from treatment at the Naval Hospital, Las Animas, Colo., and ordered to Washington, D. C., for examination for retirement and thence home to wait orders.

Philips, E. W., asst.-surgeon, detached from the Naval Hospital, New York, and ordered to the *Marietta*.

Hoyt, R. E., P. A. surgeon, ordered to the Naval Recruiting Station, Buffalo.

Garrison, H. A., asst.-surgeon, detached from the Naval Station, Guam, M. I., and ordered home to wait orders.

Tolfree, H. M., P. A. surgeon, ordered to the Naval Recruiting Station, Cleveland, Ohio.

White, E. C., P. A. surgeon, detached from the Naval Hospital, Newport, R. I., and ordered to the Naval Recruiting Station, St. Louis.

Payne, J. H., P. A. surgeon, having completed examination for promotion, ordered home to wait orders.

Jacoby, A. L., acting asst.-surgeon, ordered to duty at the Naval Hospital, Newport, R. I.

Rennie, W. H., P. A. surgeon, detached from the Naval Recruiting Station, St. Louis; ordered home and granted sick leave for 3 months.

Duhigg, J. T., asst.-surgeon, ordered to the Naval Recruiting Station, Cincinnati.

Baker, M. C., asst.-surgeon, detached from the Naval Recruiting Station, Cincinnati, and ordered to the Naval Training Station, Newport, R. I.

Woodland, E. E., acting asst.-surgeon, ordered to duty at the Naval Hospital, Philadelphia.

U. S. Public Health and Marine-Hospital Service

Changes for the week ended July 6, 1910:

Kerr, J. W., asst.-surgeon general, granted 1 month's leave of absence from July 7, 1910.

Long, J. D., asst.-surgeon general, directed to proceed to Columbus, Ga., on special temporary duty.

McIntosh, W. P., surgeon, granted 4 days' leave of absence from July 5, 1910.

Nydegger, J. A., surgeon, granted 7 days' leave of absence from July 3, 1910.

Grubbs, S. B., P. A. surgeon, granted 4 days' leave of absence en route to station.

Lumsden, L. L., P. A. surgeon, directed to proceed to Norfolk, Va., on special temporary duty.

Anderson, John F., P. A. surgeon, granted 5 day's leave of absence from July 5, 1910. Paragraph 189, Service Regulations.

Leake, J. P., asst.-surgeon, granted 7 days' leave of absence from June 24, 1910. Paragraph 191, Service Regulations.

Altree, G. H., acting asst.-surgeon, granted 30 days' extension of leave of absence from May 3, 1910, on account of sickness.

Duffy, Francis, acting asst.-surgeon, granted 4 days' leave of absence from July 6, 1910.

Houghton, M. W., acting asst.-surgeon, granted 2 days' leave of absence from July 2, 1910.

Morgan, Roy, acting asst.-surgeon, granted 7 days' leave of absence in June, 1910. Paragraph 210, Service Regulations.

Stewart, W. J. S., acting asst.-surgeon, granted 1 month's leave of absence, without pay, from June 23, 1910.

Story, Henry C., acting asst.-surgeon, granted 30 days' leave of absence from July 1, 1910.

Walker, T. D., acting asst.-surgeon, granted 11 days' leave of absence from June 28, 1910.

Wetmore, W. O., acting asst.-surgeon, granted 5 days' leave of absence from June 8, 1910, and 1 day's leave June 15, 1910, under paragraph 210, Service Regulations.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

HOSPITALS FOR CANCER PATIENTS

To the Editor:—Does the Rockefeller Institute or Hospital for the treatment of cancer receive patients at present? Are there any similar hospitals elsewhere in the country? I have a patient with a cancer in the primary stage whose case would be suitable for such a hospital. T. W. LONGFELLOW, Windfall, Ind.

ANSWER.—As we understand it the Rockefeller Hospital, now nearing completion, adjoining the Rockefeller Institute, is not to be especially a cancer hospital, but is intended to cover the whole field of medical research. The hospital will not be open for some weeks. When it is opened it will be used to care for a limited number of patients, preferably those suffering from the heretofore incurable diseases; the work will be largely experimental, and the patients received there will have consented to a participation in this experimental work. The Skin and Cancer Hospital in New York City and the Skin and Cancer Hospital in St. Louis are both excellent institutions.

Medical Economics

THIS DEPARTMENT EMBODIES THE SUBJECTS OF ORGANIZATION, POSTGRADUATE WORK, CONTRACT PRACTICE, INSURANCE FEES, LEGISLATION, ETC.

COUNTY SECRETARIES MEET IN WISCONSIN

The first annual meeting of the Association of County Secretaries and State Officers of Wisconsin was held in Milwaukee, June 21, 1910. Dr. C. S. Sheldon of Madison stated that the object of the organization was to enable county secretaries to get together, to meet with the state secretary and with each other, and to talk over the methods and most successful manner of conducting county society work. Officers were elected as follows: Dr. T. J. Redelings, Marinette, president; Dr. Rock Sleyster, Waupun, secretary; Dr. W. F. Zierath, Sheboygan, vice-president.

Dr. C. S. Sheldon presented a paper on the aims and designs of this association, in which he disclaimed originality as to the idea of such an organization. Accounts of similar organizations in other states had greatly impressed him with their usefulness in bringing the county secretaries into closer touch with the work of the state society and with each other. He told of the services of Dr. Sleyster and of his scheme of the "Booster Club" and the "2,000 for Milwaukee in 1910," and said that Dr. Sleyster had clearly vindicated his title of "Head Booster" and that the outcome of the present meeting would determine the measure of his success. He reviewed the results of organization thus far accomplished in the endeavor to transform the 150,000 disorganized doctors into one compact and harmonious body, and said further: There has been too much jealousy in the profession, resulting in the lowering of the public estimate of the whole profession. The medical expert has become discredited, and malpractice suits are made easy by the alliance of disloyal medical men with unprincipled shysters. The effort to secure sorely needed legislation has been ineffective. Medical men are not accorded the respect and consideration which they deserve, as shown by the ready acceptance of such fads as Eddyism, osteopathy and the like. The solution of these problems has been undertaken by the American Medical Association. The county medical society is the unit of organization and membership therein is the condition of membership in the district, state or national organizations. Organization is proving effective though much is still to be accomplished. Since the movement began the standards of medical education have been advanced and the work of the colleges improved, medical legislation has gone steadily forward, and sanitation and preventive medicine have made great strides.

Time has vindicated the adoption in Wisconsin of the reorganization plan. Previous to its adoption, in spite of the most strenuous and persistent effort, not over a dozen county societies could be kept alive, while the state medical society numbered only about 600, whereas now there are 54 regularly organized county medical societies and a membership in the state medical society of over 1,500. The present meeting was called to discuss conditions in the state and to endeavor to increase the efficiency of the society at least 25 per cent. during the coming year.

A grave responsibility rests on the county secretary, in securing and fostering the scientific spirit in the society, collecting dues, maintaining the organization, securing the best possible programs for meetings, and bringing the members into pleasant social relations. The object and aim of the association is to discuss ways and means to bring about these results and to keep the organization alive and vigorous.

Dr. Sleyster presented a paper on "Some Things This Association Can Accomplish." He said that what could be accomplished might be summed up in these words: It is a chance to get together and talk things over; to learn what your neighbor is doing and how. New ideas and methods are brought to the notice of each member, and adopted by him. Of even more importance is the inspiration and enthusiasm the county secretary should take home with him from a meeting of this kind. He will learn the ideals and results accomplished elsewhere, and obtain a fuller realization of the possibilities of his position. What has been accomplished in national, state or county organizations can be accomplished at home. The standing of the profession with the public is largely dependent on local organizations.

Dr. Sleyster suggested the giving of an hour's time in each society at an early meeting in the year to discussing the non-members in the county, and the appointment of a committee to get applications from these non-members; the appointment of a special membership committee to work for new members and the inviting of eligible non-members to each meeting. He urged the holding of a "Booster Meeting" each year, and to begin the campaign early, make careful and accurate plans, and then carry them out. He emphasized the value received for the membership fee paid, showing that each member received the state journal, membership in both county and state societies and malpractice insurance. He advocated the passage of a resolution in each organization instructing the secretary to make a sight draft on a specified date on each member in arrears and thus relieve the secretary of the

trouble in connection with collections; that reports of each meeting be sent to the journal; that members be optimistic in writing or speaking of their society; and that formal dignity be dropped when meeting as doctors and friends; and last, and above all else, that each member "be a booster."

Dr. George H. Simmons of Chicago delivered a short address in which he congratulated the association on the good sense of the arguments, suggestions and helpful thoughts contained in the papers which had been presented. He reviewed the plan of improved organization adopted by the American Medical Association by which the county society was made the unit of representation in the state societies and in the American Medical Association. The fundamental thing is the county society, the door through which one must enter to become a member of the state society or of the American Medical Association. The county society elects the members of the state house of delegates, who in turn elect the delegates to the American Medical Association.

Hence the county society should take more interest in what the American Medical Association and the state societies are doing and should be prepared to approve or disapprove. They should devote one meeting each year to the discussion of national and state problems and should instruct their delegates to the state society what position to take on the various questions under discussion and in like manner the delegates to the American Medical Association should represent the views of the majority. Formerly the state society did not appreciate the enormous importance of the House of Delegates of the American Medical Association, but now it has begun to realize the importance of picking representative men as delegates.

At present there are two especially important things before the association, one being the work in connection with medical education, in which every physician should take great interest, and the other the work of the Council on Pharmacy and Chemistry, which should appeal to every physician. If this work is in accordance with the views of the members, it should be so expressed in the county society where the matters should be discussed.

Dr. Simmons called attention to the *Bulletin of the American Medical Association*, published to enlighten the men in charge in the state societies—the councilors, county secretaries and presidents of county societies—containing accounts of the subjects under consideration, i. e., medical education, medical legislation, etc., and to the importance of those subjects, and suggested bringing the *Bulletin* to the county society meeting and discussing the subjects. The American Medical Association and its committees want the views of the individual members as to whether the work being done is in accord with their opinions. We have the machinery, he said, but we have not yet begun to work with the machinery. He emphasized the necessity of securing a good live secretary for the county society. He said that one of the best movements yet started in connection with this work was the organization of these associations of county secretaries, and that provision ought to be made whereby the county secretary should be able to attend these meetings and his expenses be paid. It would do more to help bring about better conditions than any other one thing; and bettering conditions means putting the medical profession higher in the estimation of the people.

Dr. G. Windesheim of Kenosha spoke on "The Relation of the Councilor to the County Society." He called attention to the fact that under the reorganization plan, the councilor was able to be of little benefit to the county society. He is no more the peacemaker, organizer and censor for the county societies but is simply the go-between of the county society and the state society. Each county society should hold a special meeting each year, at which the councilor of the district is present, and discuss such matters as refer to the state society and to the American Medical Association, with which the councilor is supposed to be familiar, and thus explain such matters as may be perhaps misunderstood, and so save the membership of a few men to the state society.

It is questionable whether the office of councilor is really necessary at the present time, except as trustee of the state society, unless some such plan can be adopted. At these meetings the delegates to the next state society meeting should be present and should be instructed as to the question to be brought before the House of Delegates. In that way the state society would get an idea as to what the county societies and the profession generally want.

Dr. H. W. Abraham of Appleton presented a paper on "The Year's Program of the County Society; How Can We Promote Greater Scientific Interests?" in which he said: The scientific program of a medical society is not the most important function of that body. Perfect organization, which includes the best of good fellowship, is the primal object. To be successful, both scientifically and financially, it is necessary to systematize and organize after the manner of a great business enterprise. The scientific program should be the postgraduate school of the profession. Every man should have some favorite line of study each year and should give the results of his studies—clinical experiences, study and review of the literature along some particular line, or original investigation. The program should be the subject of considerable inquiry on the part of the committee. Hunt out a number of individuals having a special interest in some particular subject; give them plenty of time to prepare. As a general rule, a paper should not take up a subject in the order of a text-book. It would stimulate interest and discussion if papers were so written as to emphasize the advances made, by comparison of old with new methods. Each year's program might have a paper on the newer methods of diagnosis brought out during the year; another on advances in therapeutics; another on new surgical methods, and so forth. The progress made each year in medical chemistry and physiology should be brought before the society. Many do not take medical periodicals, and would be more interested in the scientific aspects of medicine by thorough discussion. Cases in which a post-mortem examination has shown a mistake in diagnosis should be carefully written up, bringing out the clinical symptoms and signs that lead to the diagnosis, as such papers furnish a rich field for discussion and are of great practical value. Questions of medical ethics should be brought before the members for discussion. A paper should be read at least once a year on the work done by the American Medical Association. Personal work on the part of officers, especially the secretary, as to the obligation to do good work, which rests on those presenting papers, would be of value.

To sum up, a program is interesting: 1. When the papers are brief. 2. When they stimulate discussion. 3. When they arouse interest for further reading. 4. When they give the results of original work. 5. When stating clearly the advances made in medical science. 6. When they show originality in arrangement and composition.

Dr. M. V. DeWire of Sharon presented a paper on "The Business Side of the Secretary's Work." He said: In the majority of instances the work of the county secretary includes the management of the whole society; keeping the records; collecting dues; remitting to the state society; incurring expenses and paying bills; arranging for time and place of meeting; working up the program; looking after social features; arranging for the clinical cases; printing and mailing programs; soliciting new members and keeping the machinery of the society well oiled and in good running order. The number of meetings each year will vary with the number of members, their convenience in getting together and transportation facilities. The arrangement of the program will depend largely on the turn of mind of the majority of the members and as to whether they are surgeons, obstetricians, internists, etc. It is well to alternate the subjects, and it is advantageous to make here a symposium on the subject so as to be able to discuss it from all angles. The programs should not be too long, but should give ample time for discussion. Social features are an advantage. It is best to arrange a program for at least three months in advance. Clinical cases are a great help and serve to make a deeper impression of the points brought out. Members should be urged to bring such cases before the meeting, and patients can often be persuaded to come by explaining that they will get the benefit of the experience of the entire society. Invitations should be printed and mailed at least a week before the meeting.

As to little infractions of the "Principles of Ethics," patience and ingenuity on the part of the secretary are required. In nine cases out of ten, by seeing the member and talking to him you can usually show him his mistake, and he will be grateful to you for calling his attention to it. Use all the tact you have, all you can borrow and then use more tact.

Dr. J. H. Cleary of Kenosha presented a paper on "Social Features of the County Society." He said: Man is preeminently a social animal, and doctors are no exception. The mere gathering together in a society constitutes a social feature of no mean standing and proves the prime importance of the social element in all human organizations. In order to hold the continued interest of a body of men it is necessary to contribute to their mental or material welfare or to amuse them and most frequently both are necessary. A doctor's life being a serious one, anything that takes his mind from his daily work and furnishes relaxation assumes greater importance in medical organizations than in most other societies. Under the new era of systematic organization in medicine the need for social features in basic societies becomes more apparent. Bickering and enmity cannot long endure the mellow sunshine of the social hour. We must consider the opportunities for social features. In our county we find that holding meetings at the homes of members by invitation guarantees successful meetings, with only sufficient formality to conduct the business of the society. The spirit of sociability and good fellowship prevails. Special amusements provided will depend on circumstances and available talent and varies in different communities. During the summer months one or two meetings may be held in the country, and in counties having inland lakes they should be utilized to the fullest extent. Why not make these summer diversions old-fashioned picnics and bring the ladies? Only too frequently differences are carried into the families of physicians, and the presence of the families would contribute to the desired harmony and a better acquaintance. The annual meeting should be a feature of the county society, and should be made a special occasion. The business being completed in a short time, the social features can be elaborated, and may consist of a banquet and accompanying features. Special meetings may be provided or a regular meeting may be utilized in which to collaborate with neighboring counties. We have had some experience with these joint meetings in Kenosha and they were very enjoyable affairs. The social features of the county society should be in charge of a special committee, and not left to the overworked county secretary.

State Boards of Registration

COMING EXAMINATIONS

ILLINOIS: Coliseum, Chicago, July 20-22. Sec., Dr. James A. Egan, Springfield.

MAINE: Augusta, July 19-20. Sec., Dr. F. W. Searle, Portland.

OHIO: Cincinnati, July 19-21. Sec., Dr. Geo. H. Matson, Columbus.

Minnesota April Report

Dr. W. S. Fullerton, secretary of the Minnesota State Board of Medical Examiners, reports the examination held at St. Paul, April 5-8, 1910. Aside from the written examination, practical tests were given in anatomy, pathology, histology, bacteriology and urinalysis. The number of subjects examined in was 10; total number of questions asked, 100; percentage required to pass, 75. The total number of candidates examined was 18, of whom 16 passed and 2 failed. Ten reciprocal licenses were granted at this examination. The following colleges were represented:

PASSED

College	Year Grad.	Per Cent.
Rush Medical College	(1910)	88.3
Northwestern University Medical School	(1909)	77.9
College of Physicians and Surgeons, Chicago	(1905)	85.4
Johns Hopkins University	(1908)	90.1
University of Maryland	(1909)	91.2
University of Minnesota, Coll. of Med.	(1903) 80.6; (1909)	79.6, 81.2
Hamline University	(1909)	77.5
Cornell University Medical College	(1904)	79.2
Hahnemann Medical Coll. and Hosp., Philadelphia	(1909)	84.7
University of Pennsylvania	(1886)	83.6
University of Toronto, Ontario	(1909)	80.8
McGill University, Canada	(1900) 85.6; (1906)	82.9
University of Manitoba, Winnipeg	(1890)	83.8

FAILED

Hahnemann Medical College of the Pacific	(1902)	66.1
Laval University, Quebec	(1899)	72

LICENSED THROUGH RECIPROCITY

College	Year Grad.	Reciprocity with
Rush Medical College	(1909)	Illinois
College of Physicians and Surgeons, Chicago	(2, 1908)	Illinois
Illinois Medical College	(1906)	Illinois
Northwestern University Medical School	(2, 1908)	Illinois
College of Physicians and Surgeons, Keokuk	(1894)	Iowa
Kansas Medical College	(1899)	Kansas
St. Louis College of Physicians and Surgeons	(1906)	Illinois
Beaumont Hospital Medical College	(1899)	Missouri

California April Report

Dr. Charles L. Tisdale, secretary of the California State Board of Medical Examiners, reports the written examination held at San Francisco, April 5-8, 1910. The number of subjects examined in was 10; total number of questions asked, 100; percentage required to pass, 75. The total number of candidates examined was 90, of whom 73 passed, including 13 osteopaths, and 17 failed, including 3 osteopaths. The following colleges were represented:

PASSED

College	Year Grad.	Per Cent.
Cooper Medical College	(1907) 84.2; (1908) 91.6; (1909)	80.2
Hahnemann Medical College of the Pacific	(1908) 81; (1909) 80.5, 81.1.	
College of Physicians and Surgeons, San Francisco	(1904) 79.7; (1906) 81.2; (1907) 75, 77.8; (1908) 84.6; (1909) 80.3.	
University of Southern California	(1905) 79.2; (1908) 78.1; (1909) 75.	
University of California	(1909)	78.2, 84.3
California Eclectic Medical College	(1909)	82.5
College of Physicians and Surgeons, Los Angeles	(1909)	76.8
University of Colorado	(1897)	82.4
Yale Medical School	(1904)	88.9
Atlanta College of Physicians and Surgeons	(1900)	92.2
College of Phys. and Surg., Chicago	(1897) 98.8; (1905)	80.7
Northwestern University Medical School	(1895)	75
Hahnemann Medical College and Hospital, Chicago	(1907)	80.3
Northwestern University Woman's Medical School	(1890)	86.1
Medical College of Indiana	(1896)	82
State University of Iowa, College of Medicine	(1890) 91.9; (1907) 78.1.	
University of Louisville	(1893)	82.7
Kentucky School of Medicine	(1889)	82.8
Tulane University of Louisiana	(1905)	81.9
Johns Hopkins University	(1908)	88.6
Baltimore Medical College	(1906)	83
University of Michigan, College of Medicine	(1889) 82.6; (1895) 81.4.	
Harvard Medical School	(1910)	85.7
Creighton Medical College	(1900)	84.5
University of the City of New York	(1887) 93.7; (1891)	85.3
Univ. and Bellevue Hosp. Medical College	(1909)	86.4
Coll. of Phys. and Surg. of New York	(1885) 89.3 (1908)	78.4
Bellevue Hospital Medical College	(1886)	93.6
Western Reserve University	(1907)	81.2
Cleveland College of Physicians and Surgeons	(1898)	82.9
Miami Medical College	(1908)	77.2
Hahnemann Medical College, Philadelphia	(1900)	89.4
Western Pennsylvania Medical College	(1894)	82.7
Jefferson Medical College	(1894) 77.7; (1895)	78.6
Vanderbilt University	(1909) 75,	84.5
University of Vermont	(1908)	80
Laval University, Quebec	(1903) 75.6 (1904)	76.3
University of Toronto, Ontario	(1907)	87.5
University of Dublin, Ireland	(1877)	97.7
St. Bartholomew's Hospital Medical College	(1879)	96.3

FAILED

College of Physicians and Surgeons, Los Angeles	(1906)	69.8
California Eclectic Medical College	(1905)	71.8
Coll. of P. & S., San Francisco	(1903) 69; (1909)	73.6
Rush Medical College	(1895)	71
Drake University	(1896)	46.2
Hospital College of Medicine, Louisville	(1902)	64.2
Tulane University of Louisiana	(1908)	62.1
University of Maryland	(1893)	70.3
Kansas City Medical College	(1891)	73.3
Cleveland College of Physicians and Surgeons	(1884)	*77.5
Jefferson Medical College	(1884)	*78.1
Hahnemann Medical College, Philadelphia	(1909)	73.4
Tokio Medical College, Japan	(1907)	63.8

* Fell below 60 per cent. in one or more branches.

The following questions were asked:

ANATOMY

1. Trace cerebrospinal fluid from the lateral ventricles to the spinal canal. 2. Describe the ramicommunicantes. 3. Name the bones of the tarsus. Use diagram. 4. Indicate, on the diagram, the points of exit from the pelvis of the following nerves: External cutaneous, anterior crural, genitocrural, obturator, sciatic, pudic, superior gluteal. 5. Indicate, on the diagram, the course of the

common, internal and external iliac arteries. 6. What veins are without valves? 7. What cranial nerves are distributed to muscles only, i. e., are motor? 8. Give topographic outline of the lungs and bronchi on the anterior chest wall. Use the diagram. 9. Give origin and course of the eleventh cranial nerve as far as its exit from the skull. 10. What are the characteristics of arthrodial joints? Give five examples of this class of joints. 11. What is the ischiorectal fossa, how bounded and what does it contain? 12. When the arm is hanging with palm forward, what bony prominences at shoulder, elbow and wrist are normally in line?

HISTOLOGY

1. (a) Name the structures found in red bone marrow; (b) give the function of red bone marrow. 2. Draw diagram illustrating lung tissue, naming different structures. 3. Explain the difference between the mucosa of the endometrium and that of the vaginal portion of the cervix. Also make drawing. 4. Give structure of the tonsil. 5. From which germ layers are the following derived: Pancreas, spleen, large intestine, salivary glands, fat? 6. Draw a transverse section of the brain, at a point just anterior to the pons varolii. Name most important parts. 7. Draw diagram illustrating a cell and name all the necessary constituents. 8. Describe the structure of the liver. 9. Explain the difference between the white and gray matter of the brain. 10. What are terminal arteries? Name organs which are so supplied. 11. Identify slides. 12. Identify slides.

BACTERIOLOGY

1. What are the differences in structure, methods of multiplication sporulation, etc., between the blasmycetes or yeasts and bacteria? 2. What changes are produced on the culture media when *Bacillus coli communis* is grown: (a) on gelatine, (b) in milk, (c) in dextrose, (d) in lactose. 3. Describe the conditions necessary to successfully grow *Bacillus tetani* and the appearance of a stab culture in agar or gelatin about the sixth day. 4. What is the difference between an antitoxin and a bacterial vaccine? 5. Name four pathogenic anaerobic bacteria. 6. Differentiate between the bacillus of tuberculosis and *Bacillus leprœ* taking into consideration staining, culture peculiarities, effect on tissues and relation to tissue cells of the host. 7. Describe briefly how you would make gelatin plate cultures, using material from a furuncle as the source from which to obtain the germ. 8. Name ten pathogenic bacteria that are Gram-positive. 9. What do you understand by the opsonic index? 10. How would you sterilize (a) a culture tube of gelatin, (b) a glass container with rubber stopper, (c) a platinum needle in a glass handle. 11. Identification of cultures. 12. Identification of slides.

CHEMISTRY

1. What is the poison in most headache powders? Its effect? Antidote? 2. Mention six elementary substances commonly used in their pure state in medicine. 3. What does the presence of an abnormal quantity of chlorin in drinking water indicate? 4. How would you detect the presence of bile in the urine? Give two tests. 5. Give the reaction, specific gravity and percentage of fats in normal cow's and woman's milk. 6. Mention a secretion in the body that contains cholesterin, one that contains pepsin, and one that contains trypsin. 7. What antidotes should be used in phosphorus poisoning? Explain the action of each. 8. Define and illustrate (a) capillary attraction, (b) absorption, (c) diffusion, (d) osmosis, (e) endosmosis. 9. In what principal form is nitrogen eliminated from the body? Give the chemical properties of nitrogen. 10. What is the chemical composition of the various renal calculi? 11. Mention one chemical antidote for each of the following: (a) Phenol, (b) arsenious oxid, (c) sulphuric acid, (d) mercuric chlorid, (e) oxalic acid. 12. What are the distinguishing characteristics of urates and uric acid as found in the urine? Give test for uric acid.

PHYSIOLOGY

1. How and where is lymph formed? 2. Discuss sleep and its causation. 3. Discuss briefly the influence of the nervous system on the digestive secretions. 4. Describe the movements of the intestines during digestion. 5. (a) Explain the effect of expiration on the volume of the brain. (b) Inspiration. 6. Discuss the formation, function and fate of glycogen. 7. What is the physiologic difference between the brain of man and that of lower animals? 8. Under what circumstances may functional union be made between fibers of different nerve trunks? What practical value has this operation? 9. Give nerve supply and action of muscles concerned in the movements of the eyeball. 10. Do we determine the function of a nerve by the location or function of the center from which it comes or by its peripheral connections? Give your reasons. 11. What is the effect of a destructive lesion in the posterior limb of the internal capsule? 12. To what extent is the secretion of sweat under nervous control? Vascular?

PATHOLOGY

1. Describe the difference in the pathologic changes which take place in degeneration of the tissues and those which take place in atrophy. 2. Give the pathology of tabes dorsalis. 3. Describe the gross and microscopic changes which take place in the spleen, liver and kidneys as a result of prolonged exposure to malarial infection. 4. What are the postmortem changes usually found in diabetes mellitus in (a) children; (b) in adults of middle age; (c) in adults of advanced age? 5. What is the average blood-pressure in adults from 50 to 60 years of age measured in millimeters of mercury? And describe the results if this pressure is exceeded for a considerable time. 6. In bony tissue, what variety of malignant growths usually occur and why? 7. Under what conditions is cerebral embolism most likely to occur? What blood-vessels are most likely to be affected and why? 8. Describe the local lesion caused by infection by anthrax bacilli; the general or systemic effects and state how infection usually occurs. 9. Describe the condition present in acute dilatation of the heart. Give the immediate and predisposing causes and the usual final result. 10. State fully why urinary bladder disorders are so frequent and so resistant to treatment in both elderly men and in elderly women. 11. Identify 2 slides. 12. Identify 2 slides.

HYGIENE

1. Describe in detail the method of transmission of yellow fever. 2. What measures would you adopt to prevent the spread of typhoid fever during an epidemic? 3. What is a septic tank? Describe construction and explain how it acts. 4. What sanitary measures should be adopted in caring for tuberculous patients? 5. Name five of the most common intestinal parasites, and give a short description of each. 6. Give three ways of fumigating a room with formalin; also two methods with other disinfectants. 7. What effect have venereal diseases on the propagation of the human species? Explain. 8. How does the hookworm usually enter the human body? What means would you adopt to prevent its spread? 9. Describe the technic of vaccination and give the course of a successful case. 10. What is the period of incubation of the following diseases: Plague, smallpox, diphtheria, scarlatina, measles? 11. What is the object of placing traps on all waste pipes? What danger to health would arise if there were no traps? 12. Describe two types of water filter. What should be accomplished by a good filter?

OBSTETRICS

1. What zymotic diseases are liable to affect the pregnant and puerperal woman, and how? 2. How soon after the completion of the second stage of labor should the umbilical cord be ligated? How dressed? What are the dangers of improper dressing? 3. What injuries are liable to occur to the birth canal during labor? 4. Under what circumstances are anesthetics indicated in labor? What are the dangers? 5. What are the causes of premature rupture of the membranes? How does it influence the progress of labor? 6. How would you determine if a child is premature at birth? 7. Differentiate between retained and adherent placenta; the management of each. 8. What can be determined by external palpation of the pregnant woman at the eighth month? How should it be performed? 9. What are the so-called false pains of labor? Differentiate from true pains. 10. Rupture of the uterus, etiology and symptoms. 11. Give the physiology of menstruation, of ovulation, relation if any. 12. What is inversion of the uterus? Diagnosis and management.

GYNECOLOGY

1. Give the conditions justifying operative measures in fixed retrodisplacement of the uterus. 2. Describe a pelvic hematocele and give the usual cause. 3. What is the pathology of pelvic cellulitis and what are the physical signs? 4. Name the most important causes of sterility. 5. Differentiate between a pudendal hernia and a pudendal hematocele. 6. What do you understand by the operation for perineorrhaphy? 7. Give the etiology and pathology of chronic endocervicitis. 8. Describe a case of carcinoma uteri and give some of the most prominent physical signs. 9. Discuss the matter of relative prognosis of cancer of the body of the uterus and cancer of the cervix. 10. Describe the mode of use and purpose of a vaginal tampon. 11. Differentiate between herpes of the vulva and chancre. 12. Name the muscles of the perineum and give the functions of the perineal body.

GENERAL DIAGNOSIS

1. Give the physical signs of a pleurisy with effusion. 2. Give the symptoms of bubonic plague. 3. Give the symptoms and physical signs of aortic insufficiency in the stage of failing compensation. 4. Give varieties, etiology and symptoms of chorea. 5. Give the symptoms of tabes dorsalis. 6. Describe a Colles' fracture. 7. Give the points on which you would make a diagnosis of cancer of the stomach. 8. Describe diabetes mellitus and differentiate it from diabetes insipidus. 9. Differentiate rubeola from scarlet fever. 10. Describe the secondary lesions of syphilis. 11. Give the symptoms of a transverse myelitis. 12. Give the symptoms of cholelithiasis.

Book Notices

THE ELEMENTS OF THE SCIENCE OF NUTRITION. By Graham Lusk, Ph.D., Professor of Physiology at Cornell University Medical College, New York City. Second Edition. Cloth. Price, $3 net. Pp. 402, with 13 illustrations. Philadelphia: W. B. Saunders Co., 1909.

This is an important publication and deserves more than passing notice. Not only does this bring the whole subject up to date, but several of the chapters are practically rewritten, so great has been the advance in knowledge since the appearance of the first edition three years ago.

In the introductory chapter the author reviews the progress in our knowledge of nutrition, beginning with the "Aphorisms" of Sanctorius and following with a rather detailed account of the work of Lavoisier, Liebig, von Voit, Pettenkoffer, Pflüger, Rubner, and many others less widely known. Some fundamentally important truths of nutrition may well be quoted in the author's concise terms: "Metabolism in the body is not proportional to the combustibility of the substance outside the body; but protein, which burns with difficulty outside, metabolizes with the greatest ease; then carbohydrates; while fat, which readily burns outside, is the most difficultly combustible in the organism" (Voit).

"The quantity of oxygen needed in metabolism depends on the kind of material that burns in the organism. . . . The absorption of oxygen does not cause metabolism, but rather the amount of metabolism determines the amount of oxygen to be absorbed. The metabolism of the tissues, through its oxygen requirement and its carbon dioxid production, changes the condition of the blood and thereby regulates respiration."

An intelligent basis for the understanding of the process of nutrition is best acquired by a study of the organism when it is living at the expense of materials stored within itself, as it

does in starvation. In the chapter on starvation is explained that during starvation an animal lives on its fat and protein and that its length of life depends on these. When there is no fat, protein may burn exclusively, therefore "the quantity of the protein metabolism in starvation depends on the amount of fat in the body." "The actual loss of body weight is greater when protein is the source of energy than when the energy is derived from fat," because it requires 33 gm. of protein to yield 26.4 calories of heat, while 2.8 gm. of fat will yield the same.

The chapter on the regulation of temperature is a most important one. Warm-blooded animals maintain an even temperature through the interaction of two factors: (1) heat generation (thermogenesis) through tissue metabolism; and (2) loss of heat from surface (thermolysis) through radiation, conduction and evaporation of water.

Metabolism is proportional to the superficial area of an animal, but other factors, such as low external temperature, cold baths, wind, humidity and clothing influence metabolism and also modify the loss of heat from the surface of the body.

The recent interest in the "low protein" diet advocated by Chittenden gives the chapters on the influence of protein food an especial importance. Proteins are now definitely known to be constructed of chains of amino-acids. After citing the work of Emil Fischer in building up protein bodies synthetically, describing the products of their hydrolytic cleavage and the methods of the construction of muscle, gland, nerve and other tissue by their synthesis after absorption, Lusk says that any excess of protein ingested is promptly catabolized, or fat may be deposited. He discusses the influence of fat and carbohydrates on metabolism and refers to the experiments of Meissl and Strohmer, Voit, C. Lehmann and Rubner, in which it was shown by experiments on pigs, geese and dogs that the capability of building up fat out of carbohydrates is widespread in the animal kingdom. It is valuable to know that one may diet an obese patient on a food containing little protein and two-thirds of the body's energy requirement without danger of protein loss, the other third of the energy being furnished by the body fat.

In the chapter on the "Influence of Mechanical Work on Metabolism" the author shows that the muscular work does not increase protein metabolism, quantitatively, or change it in character. The power to accomplish muscular work is not usually derived from protein metabolism, but from the combustion of sugar and fat; therefore physical exercise requiring fat consumption without concomitant destruction of protein must be of the greatest value in the treatment of obesity. The increased output of carbon dioxid due to mechanical work is always directly proportional to the work accomplished.

Lusk reports the influence of alcohol on muscular work, as studied by Shumburg and by Hellsten. Both of these investigators found a temporary increase in working power of the muscle, "but after twelve to forty minutes there is a decrease in power which lasts for two hours. No such depression occurs after taking sugar. It is obvious that alcohol is not beneficial when muscular work is to be accomplished."

The influence of training is to make the use of body energy more economical.

Later chapters of this valuable work are devoted to: "A Normal Diet;" "Food Requirement During the Period of Growth;" "Metabolism in Anemia, in Diabetes, in Fever;" "Purin Metabolism—Gout," and finally Chapter XV gives a summary of the theory of Metabolism. The chapters on diet and metabolism in disease are of especial value to the clinician.

The theory of metabolism is a valuable formulation of the known facts and closes with the following sentences: "Living protoplasm metabolizes in accordance with its necessities at the time and never more. A large supply of nutrient materials will not increase cell metabolism. If food is ingested above the requirement of the organism any excess will be retained in the body (unless it has passed out unabsorbed). However clearly formulated the laws of metabolism may be—and many of them are as fixed and definite as are the laws of physics and chemistry—still the primary cause of metabolism remains a hidden secret of the living bioplasm."

The widespread interest in the subject of nutrition at the present time makes this a timely and valuable addition to the literature of the subject.

HYGIENE AND MORALITY. A Manual for Nurses and Others, Giving an Outline of the Medical, Social and Legal Aspects of the Venereal Diseases. By Lavinia L. Dock, R.N., Graduate of Bellevue Hospital Training School. Cloth. Price, $1.25 net. Pp. 200. New York: G. P. Putnam's Sons, 1910.

This book, after vividly describing the so-called social diseases, syphilis, gonorrhea and chancroid, historically, clinically and from their sociologic aspects, plunges into the subject of prostitution; giving the history of legislation on the subject. Segregation, regulation and licensing of prostitution are all condemned unsparingly. The author then discusses white slavery and the age of consent, and scathingly arraigns legislators, ministers and the medical profession, as well as the male population in general, for their indifference or positive opposition to measures for the betterment of the condition of women in this respect. She acknowledges, however, that through the efforts of various societies and individuals, principally supported by women, there is recently an awakening on these subjects that promises much for the future, and gives the medical profession especial credit for endorsing and supporting the proposition that continence is not inimical to health. After giving a practical outline of measures for preventing, through prophylactic education in the hygiene of sex, and by other means, many of the evil consequences of what she calls "commercialized prostitution," and the social diseases, the author, who has evidently studied long and thought much and deeply on these questions, advocates as the real solution of the problem equal standards of purity for the two sexes and woman suffrage. However one may feel about the latter conclusion, the book certainly presents in a strong manner the truth about evils which cry aloud for some solution, and should help in bringing about the enlightenment of the public. It will undoubtedly bear a goodly share in arriving at whatever measure of success is attained in that direction.

THE EXPECTATION OF LIFE OF THE CONSUMPTIVE AFTER SANATORIUM TREATMENT. By Noel D. Bardswell, M.D., Medical Superintendent, King Edward VII Sanatorium. Cloth. Price, $1.50 Pp. 130. New York: Oxford University Press, 1910.

The problem of life expectancy in the consumptive class requires for its solution accurate life-histories of a large number of patients subsequent to their discharge from sanatoria. Such histories have not been available, partly because of the difficulty of keeping in touch with discharged patients and partly because results have not confirmed the prophesies of some ardent advocates of sanatorium treatment. Dr. Bardswell has made a small but valuable contribution in this record of 241 cases of tuberculosis, which includes 62 cases of incipient disease, 95 of moderately advanced and 84 of far-advanced cases. He believes that his statistics indicate that a permanent recovery may be expected in from 70 to 80 per cent. of cases of early consumption, in from 40 to 60 per cent. of moderately advanced cases and in 8 to 10 per cent. of the far advanced cases. If like statistics from many observers can be steadily collected and critically and impartially analyzed, we may, in time, arrive at the consumptive's expectation of life and at the same time ascertain the true value of the sanatorium and other treatment.

A HISTORY OF THE LONDON HOSPITAL. By E. W. Morris. Cloth Price, $1.75 net. Pp. 296, with illustrations. New York: Longmans, Green and Co. [1910].

Those who imagine from the title of this book that it is a dry and prosy chronicle of facts relating to the institution named in the title will be agreeably surprised. The author has really painted a panoramic picture of the progress of medicine and surgery from the time of the founding of the London Hospital, in 1740, to the present time. More than that: he has given in interesting detail the conditions obtaining among such of the poor and needy as, when ill, applied to this hospital for relief. The book is indeed a history, and a most instructive one, of British medicine, with the London Hospital for a central theme. To read it is to admire the magnificent pioneer work of those who have gone before and to be thankful that one is living in the twentieth century. Having read it, one has a clearer conception of what the British system of supporting hospitals by voluntary contributions means.

THE DISEASES OF INFANCY AND CHILDHOOD. Designed for the Use of Students and Practitioners of Medicine. By Henry Koplik, M.D., Attending Physician to the Mount Sinai Hospital. Third Edition. Cloth. Price, $5. Pp. 944, with 233 illustrations. Philadelphia: Lea & Febiger [1910].

This edition is considerably enlarged, thoroughly revised and brought up to date. The book reflects the mature experience of a keen observer. It is reliable throughout, is abundantly illustrated, and is, in every way, well balanced, both as a textbook for the student and as a reference book for the general practitioner. The chapters on certain subjects with which the author is perhaps most naturally associated in our minds, such as those on meningitis, the acute infectious diseases, etc., are especially noteworthy. The chapters dealing with infant-feeding and nutritional disturbances in infancy reflect to a large extent and in a very refreshing, though conservative, manner the recent advances in our knowledge of that subject. The book can be safely recommended as one of the best exponents of American pediatrics.

THE CONQUEST OF CONSUMPTION. By Woods Hutchinson, M.D., Author of "Studies in Human and Comparative Pathology," etc., and Clinical Professor of Medicine, New York Polyclinic, etc. Cloth. Price, $1 net. Pp. 138, with illustrations. Boston: Houghton Mifflin Company, 1910.

Woods Hutchinson is a sort of hygienic John the Baptist and goes forth preaching in the wilderness of the lay world. He discusses the enemy—tuberculosis—what happens to the bacillus in the human body, the weapons for the fight against the enemy, how to get fresh air and sunlight (he considers food in reality as the greatest foe of consumption), discusses intelligent idleness, the question of the camp and country, the financial question, the expense of treating tuberculosis, the matters of climate and health and ends with specifications for the open-air treatment of tuberculosis at home. The book is hopeful, encouraging, and can be heartily commended.

PRESCRIPTION WRITING AND FORMULARY. By John M. Swan, M.D., Associate Professor of Clinical Medicine in the Medico-Chirurgical College of Philadelphia. Flexible leather. Price, $1.25 net. Pp. 185. Philadelphia. W. B. Saunders Co., 1910.

This is an excellent little manual. Owing to the multitude of private formulas and "ethical" proprietary remedies, the average student who graduates is unable to write a prescription correctly. This little manual takes up the construction of prescriptions, Latin forms and terminations, the Pharmacopeia, weights and measures, doses, abbreviations and incompatibilities and has an appendix of more than 100 pages devoted to a formulary for various conditions, alphabetically arranged.

THE INFLUENCE OF STRONG, PREVALENT, RAIN-BEARING WINDS ON THE PREVALENCE OF PHTHISIS. By William Gordon, M.D., Physician to the Royal Devon and Exeter Hospital. Cloth. Price, 7 shillings 6 pence net. Pp. 108, with illustrations. London: H. K. Lewis, 136 Gower St., W. C., 1910.

This work shows an enormous amount of detail work and it is regrettable that it can be of little value save to the statistician. Few conclusions of value are made—the most important probably being that the prevalence of strong rainy winds appears to be remarkably associated with the increased prevalance of tuberculosis, while the absence of such winds appears to correspond strikingly with the rarity of the disease.

Society Proceedings

AMERICAN ACADEMY OF MEDICINE

Fifteenth Annual Meeting, held in St. Louis, June 4 and 6, 1910

The President, DR. JAMES H. MCBRIDE, of Pasadena, in the Chair

The officers elected were given in THE JOURNAL June 18, p. 2053.

Report of Committee on Essential Subjects to Be Taught in a Medical School

DR. EDWARD JACKSON (Chairman), Denver: A most urgent present need regarding medical education is careful consideration of just what matter should be placed before the student by the teacher of each subject in the medical curriculum. The paramount need is wise selection. The giving to each individual teacher absolute control of the matter of selection and of a certain portion of the time and energy of each medical student, with little attempt to closely co-ordinate his own with the work of the different departments, has developed a state of pedagogic anarchy. A proper corrective would be a general discussion in which the suggestions of the teacher of one branch should be criticised by the teachers of the other branches.

In this connection it would seem advisable that the Academy should devote a mid-year conference, held probably in connection with the Association of American Medical Colleges, to the discussion of this general subject. The underlying thought of papers presented at such a conference should be to seek an agreement as to the relative order of the importance in the training of the topics to be taught in a particular branch. In making such selection of topics certain general needs and facts must be acknowledged as fixing their relative values in the required course. For example:

The general developmental value of the topic, especially in the fundamental branches. Some natural order of development, and the practicability of studying certain things better in college while others may be as well or more readily studied afterwards. The need of mutual understanding among physicians in giving professional unity; the appreciation by each of work in all branches with ability to appropriate that which can be made useful in one's own work. The facts that every graduate should be fitted to render some definite practical service to the community before he is heralded as a doctor of medicine, and that the required undergraduate training is the beginning of a process normally to continue throughout the whole professional life.

While, for development in conformity to individual tastes and desires, some freedom must be given from the beginning, the full latitude in this respect must be left for the post-graduate period of development.

Educational Principles Involved in the Combined Course in Arts and Medicine

DR. A. ROSS HILL, University of Missouri, Columbia: The arrangement by which a student pursues general courses in letters and science for two or three years, then for a year or two follows about equally fundamental courses in the sciences of anatomy and physiology with vocational or professional motive to stimulate his interest, but with an emphasis on the spirit of discovery and on scientific method, then spends two or more years in specifically professional training with the hospital clinics for his laboratory, seems to recognize the normal development of special interests and the gradual growth of professional insight toward that maturity of judgment which is demanded of even the beginner in the field of medical practice; while it saves the immature student from the pursuit of that narrow practicality which forever limits his power to think and his ability to grow and adapt his judgment to new conditions and new scientific discoveries. To object to it on the ground that it means counting one and the same course to two degrees is purely formal and arbitrary and would be considered puerile were it not for the educational standing of those who offer the objection. The severest criticism that seems at all fair to pass on the combined course is that it is good enough for those who will not adopt a better plan, the better plan being the requirement of the A.B. degree of candidates for entrance to the school of medicine.

The ultimate solution of the problem of how to secure sufficient breadth of preliminary training for the medical student without unduly prolonging the period of preparation seems to lie in the improvement of our elementary schools, which are now wasting about two years of the average pupil's time. When the present standard for the A.B. degree will have

been attained by normal, unretarded youth at twenty instead of twenty-two years, the requirement of an A.B. degree, representing in the main humanistic culture, will become a natural standard for admission to schools of medicine, and the combined course will become inadvisable. Till then it seems not only to furnish a reasonable standard of requirement, but to be based on sound educational principles.

Is the Profession Losing Its Grip?

DR. CHARLES MCINTYRE, Easton, Pa.: Physicians of to-day do not occupy the same relation to the world of education and science as they did in the middle of the last century. Many doctors of medicine were teaching general science and other subjects in colleges in the decade 1841-1850, while to-day in these colleges not a single M.D. occupies a corresponding chair. On the other hand, it is a frequent occurrence to find men without the M.D. degree holding prominent chairs in medical colleges, serving as directors of health departments of our municipalities and writing school physiologies. The question is raised, is not the condition due to the narrowing influences of the early specializing in the present scheme for medical education? Professor Dewey, of Columbia, is quoted as saying that much of the science teaching has failed to be a means of liberal education because of the faulty method of many of the teachers, and the assertion is made that the temptation to pursue the faulty method is greater in the medical college than in the undergraduate department. It may, perhaps, be said that the present system of education is not a success because its promoters are desirous of so many changes requiring more time. It seems pertinent to question the correctness of the principle of the present scheme, and to suggest that more attention be paid to the preliminary general education than now, teaching thoroughly the rudiments of medicine in the medical course, and transferring much that is now attempted to elective postgraduate work.

DISCUSSION

DR. E. P. LYON, St. Louis: My own observations have shown me that the man with the two years' training, the man who takes six years of college and medical work, is able to advance to a much higher degree of attainment than the man who goes into the medical school from the high school. I believe the combined course is the ideal toward which we should all work in medical education. I agree with Dr. Jackson in his reference to a state of "pedagogic anarchy" in some medical schools. It would seem that there ought to be a medical normal school in which men could learn how to teach. In my opinion the main reason why men who devote their entire time to the fundamental sciences should be encouraged to teach these subjects rather than practitioners is that most of them are graduates of laboratories in which they have had to do some teaching and are men pre-eminently interested along this line.

DR. THOMAS D. DAVIS, Pittsburg: The trouble with our medical educational institutions to-day is that they are trying to make too much out of students and demanding of them many things that are impracticable. No one should leave college with the idea of being equipped as a specialist. That is the work of the post-graduate school.

DR. J. E. TUCKERMAN, Cleveland: The man who would be fitted by temperament, by natural ability, to take up the study of medicine has no need to waste, as he now does below the college course, two to four years. We must begin far down in our educational system to put it on a proper basis. If we say that laboratory teaching should be done entirely by laboratory men, we run into another difficulty. I have known efficient chemical laboratory men to be ignorant of clinical facts concerning drugs about which they were teaching.

Shall the Ph.D. Be Granted for Work in the Surgical Sciences?

DR. ARTHUR E. HERTZLER, Rosedale, Kan.: The functions of a university are humanistic, scientific and practical. The practical can reach its highest perfection only when based on the humanistic and the scientific. The science of medicine is a department of biology. Applied medicine is but the discovery and application of forces which negate the counteracting forces as revealed by pathology. Chemistry, anatomy, physiology and pathology are now accorded academic recognition. With men and equipment equal to those now available for the fundamental branches, surgery would reach and maintain the same high scientific level. So-called practical medicine is but an apology for the lack of scientific methods, with the introduction of scientific methods. Practical medicine will give place to the "applied science of medicine." With the granting of university rank the science of surgery will share the benefits of definite organization and will profit by the humanistic spirit of the university, and will encourage picked young men who desire to devote themselves to scientific careers to select surgery as the field of their activities as the fundamental branches have in the past.

DISCUSSION

DR. HENRY B. WARD, Champaign, Ill.: The answer to Dr. Hertzler's question must be traced to present conditions. For the granting of the Ph.D. in the surgical sciences there must be in the curriculum opportunity to do research work. The intensiveness also of an institution is a factor. The man who would take the degree must have the opportunity to go far beyond the limits of ordinary instruction. How many of our colleges are prepared to offer this opportunity? In the matter of adequate teaching, the man who shall successfully direct the work of the student for the degree of Ph.D. must be one who has the vision of the prophet, one who sees beyond the limits of the known, who has sufficient grasp and insight into the future to indicate to his disciple the successful lines of attack in mastering the unknown. And, while results depend largely on environment, fundamentally they depend on the individual student, and the question ultimately is one of mental caliber. Personally, I confidently look forward to the time when the medical schools of this country will not only in surgical sciences but in all branches offer the Ph.D. degree, and will carry their students to the point where they will thoroughly deserve that degree. Then the contributions of America to the advancement of medicine will be worthy of a great nation.

DR. HENRY B. HEMENWAY, Evanston, Ill.: I hope the day is far distant when Professor Ward's proposition will come true. I would have the degree of M.D. stand for the very best we can get in medicine, allowing to those who have achieved something extraordinary an honorary degree. Let it be a purely honorary matter, not a matter of commercialism. I do hope, however, to see the time when the colleges all through the land will give a training which would be equal to that which might command the Ph.D. degree.

Correlation of School Health Supervision With Other Health Agencies

DR. ERNEST B. HOAG, Berkeley, Cal.: School health supervision ought to be under the control of the Board of Education and not under the board of health in all places, with the possible exception of larger cities with well organized governments. There ought to be a cooperation between the school health officers and the city health officers that there need be no duplication of effort. It is usually possible to bring various health organizations such as the associated charities, the medical dispensaries, the dental dispensaries and certain social welfare societies under one general organization. In Berkeley all of these health agencies have been brought together under one roof with great economy of effort, effectiveness, time and money.

The School System and the Child

DR. A. L. BENEDICT, Buffalo, N. Y.: In reference to the frequent condemnation of the modern system of education, it may be said that a system that has been increasingly bad should manifest itself by an increasing mortality in the rising generation. On the contrary, there has been a decided decline of the death rate and an increase of the average longevity of about seven years in a generation. Much of the reputed ill-effects of our school system may be attributed to extrinsic causes. Many children are insufficiently fed and clad, and are over-

worked by their parents. The criticism that the school system treats the children wholesale instead of considering individual capabilities is but a reflection of the requirements of life in a republic. While in large cities the establishment of special courses for those above and below the average capability might be advisable, the present standards represent fairly well the capability of the majority of pupils. The school has been of immense benefit also in having corrected purely physical defects, the cause of dulness. The verdict of the child himself is distinctly favorable. Even proportionate to the population the high school attendance has doubled or quintupled in the last 25 years. This could scarcely be the case if the grammar school were either physically injurious, cruel, or inconsistent with the real needs of the people.

DISCUSSION

DR. THOMAS D. DAVIS, Pittsburg: We do not give the public schools the high praise they deserve for what they accomplish in the small amount of time they have with the scholars. The charge is often made that the children are burdened with overwork, but I could cite instances showing that the strain is put on the child at home, and the school is wrongly charged with the nervous break thus wrought.

DR. HELEN C. PUTNAM, Providence, R. I.: How we look at the public schools depends on what we consider they are for. We consider that they are to make good citizens. The parents have been criticized very severely, but the public schools did not educate them to become good parents; consequently their children are not being well trained. That is one way in which the public schools are far behind the needs of the country. We have 500,000 tramps, and over 90 per cent. have been in our public schools. Why are they tramps if the public schools did their duty by them? We have a large class of paupers unable to support themselves and only a small proportion able to read and write. There is something about the education of the masses in this country that is at fault. I am entirely willing to grant a lot of good intention with regard to the public schools, but until we can supply institutions that will give teachers a better training, and have appointed committeemen who instead of being politicians, are up to the standards in their ideas with regard to education and what education is for, I think we must strive with every faculty we have to try to improve our public schools.

DR. LEARTUS CONNOR, Detroit: The importance of manual training in the schools ought to be emphasized. The severest criticism I have to make of the whole school system is that it magnifies the power of book knowledge to the detriment of the practical knowledge that enters into the life of a citizen.

DR. HENRY B. WARD, Champaign, Ill.: I agree with Dr. Putnam that the schools are not doing what they ought, but that is not the fault of the schools. When we consider that the child spends one-tenth of his time under the influence of the teacher, it is unreasonable to charge the shortcomings in the case to this influence and ignore the other 90 per cent. of influence. The fundamental difficulties can never be righted exclusively by the school. There will be required the influence of the home to make the product of America higher and better in the next generation.

The Social Aspect of the Gonococcal Infection of the Innocent

DR. W. A. NEWMAN DORLAND, Philadelphia: Discarding the statistics of the alarmists, who estimate that as many as 90 per cent. of pelvic inflammatory cases in women are due to the infection, 50 per cent. may be attributed to this cause. Not only are there innocently infected women, but there has been marked increase of the infection in little girls. It is the concern of the medical profession to exert greater care in the "social" treatment. Social status does not afford immunity and social status does not guarantee personal purity. While the time may not be ripe for the state to require a medical certificate, the young woman's parents may demand a clean bill of health. Especially should the profession avoid the fallacy that health and continence are not compatible. By no means during the presence of the disease should a gonorrheic marry. The disease is curable; when cured there is no danger of communication.

Ocular Disease in Hereditary Syphilis

DR. S. D. RISLEY, Philadelphia: More than 60 per cent. of all cases of iritis applying for treatment are due to syphilis, and at least 35 per cent. of all blindness is the result of gonococcic infection during parturition. The vast majority of cases of interstitial or parenchymatous keratitis are unquestionably due to hereditary syphilis. Thus syphilis stands to-day, as it has stood for generation after generation, the darkest blot on the fair escutcheon of our Christian civilization. Attention should also be called to the very large group of patients suffering from chronic forms of eye disease which are difficult to classify, but which are doubtless due to impaired general nutrition, the result of mild or less virulent doses of the infection.

The Social Plagues and the Public Schools

DR. IRA S. WILE, New York City: The state in compelling attendance at public schools tacitly assumes the responsibility of safeguarding children from all contagious and preventable diseases communicable at school. Books on school hygiene and medical inspection of schools do not refer to venereal diseases as part of a school problem. Medical examination of teachers demands more attention. Janitors, scrub women and attendants are known sources of venereal infection. Of the new admissions to schools for the blind in 1907, 25.21 per cent. were due to ophthalmia neonatorum. To educate the blind costs eleven times as much as to educate one with normal sight. The school problem consists principally in prevention by abolishing common drinking cups, towels, pencils, sponges, etc. Toilet facilities must be improved. Examination of genitals must include microscopic examination of mucus or pus. The boards of health should make such examination gratis. Children require better hygienic education in order to protect themselves when puberty develops.

The Black Plague and the Educational Remedy

REV. GEORGE R. DODSON, St. Louis: In fighting the black plague the first thing is to turn on the light. At present we instruct children in many matters of minor importance and keep from them the knowledge that would save them from their greatest dangers. In conveying this instruction the simple, direct method is the best. There is nothing so eloquent as the terrible facts. It is essential that the people should initiate and carry on this reform, for only those social movements which have behind them popular conviction "stay put." Such legislation as may be enacted should aim rather at enlightenment and educational effects than at considerable direct results. The public will respond as soon as it is made clear that venereal disease destroys not only the dissolute, but that in immense numbers it blights the lives of the innocent. Furthermore, the teaching that saves from the black plague will also raise the whole subject of the transmission of life from the low plane it occupies in the thoughts of many, and the by-product of our instruction will thus be of almost as great value as the public health which is the main aim.

OHIO STATE MEDICAL ASSOCIATION

Sixty-fifth Annual Meeting, held at Toledo, May 11-13, 1910

(*Concluded from page 155*)

Two Cases of Heart Block

DR. L. C. GROSH, Toledo: One case illustrates block at the auriculoventricular juncture, and the other at the sinoauricular juncture. By heart block is to be understood an imperfect conduction of the impulse from one cavity of the heart to another. In man two forms have been found: a failure of some of the beats to pass the block, and when none of the impulses are conducted from one part to another. Either of these may result from interference with the vagus center; any interference with the vagus nerve or its terminals, or by changes in the myocardium. The first case was under observation for four years with unusual opportunities for registering both the venous and arterial pulse. The condition was changed from

complete block to normal two different times. The blood pressure was at all times over 200. There was a complete series of transitional forms from the 1-1 rhythm in which conduction was adequate, through 3-2, 2-1, 5-2, to 7-3 and 8-3 rhythm, and it is difficult to state at what point the ventricle became independent of the auricular tutelage. The second case, that of a man showing emaciation, anemia and a palpable tumor connected with the pylorus, was under observation a year, during all of which time the arrhythmia persisted without fundamental change until death. A microscopic examination in the area described by Heath and Flack revealed marked proliferation of the connective tissue and minute plaque-like calcareous deposits.

DISCUSSION

DR. J. E. GREIWE, Cincinnati: The interesting feature of the analysis is that the muscular tissue of the heart must be considered as divided into two classes: the tissue which has to do with contraction and expansion of the blood vessels, and the tissue which is associated with the function of conductivity. There is a definite path for the stimulation of conduction. It has been found that this does not pass directly to the ventricular wall but into the papillar muscles, and on to the muscular fibers from above downward and then back to the heart. If there is a sclerotic process of the heart, a great deal depends on the seat of the trouble. In acute myocarditis there may be no change in the rhythm of the heart; and where there is marked change in the rhythm there may be no extensive myocarditis.

DR. L. C. GROSH, Toledo: The work done from a physiologic standpoint is of great importance. The rather peculiar tissue that is gathered into the so-called bundle of His has had some of the primary functions of the heart attributed to it, and while this is more or less speculative, I feel that the heart has developed up around this peculiar primary cardiac canal.

Diagnosis and Treatment of Early Pulmonary Tuberculosis

DR. J. P. DEWITT, Canton: The fact that present methods of treatment will effect a cure in tuberculosis in ninety to ninety-five per cent. of cases if applied early should stimulate all medical men to become competent to make an early diagnosis. Inspection, palpation and percussion are of little value in early cases, and information must be had through auscultation. One should proceed to the use of tuberculin to prove the diagnosis. Close observation will often reveal a local reaction (e. g., by the use of Hay's laryngoscope) without general reaction occurring. The inunction of the tuberculin ointment of Moro or the cutaneous test introduced by von Pirquet is usually employed first; if reactions do not occur, the old tuberculin of Koch is injected subcutaneously. After gradually increasing the dose from one-tenth to ten milligrams, if no reaction has occurred it is quite certain that the patient has not early tuberculosis. Few patients in limited financial condition ever recover from well-developed tuberculosis. Observation will show that many supposed to have been cured by rest and feeding relapse. A cure is due to the infected organism establishing an immunity to the tubercle bacillus. I have never seen harmful results from reactions, but often marked improvement follows where previously the patient was not doing well. If there is a temperature of 100 degrees or over the patient is put to bed until the temperature is normal. Patients immunized with tuberculin do not develop complications of the larynx, glands or bowels, and very few relapses are noted, while patients apparently cured without tuberculin frequently relapse and develop complications. Return of the bacilli proves that the patient was not cured. Patients given specific treatment, plus hygienic treatment maintain their immunity to the tubercle bacillus and its toxin.

DISCUSSION

DR. R. P. DANIELLS, Toledo: The many different dilutions of tuberculin put out by the various companies have made its use apparently so easy that it has become a dangerous thing, because not given carefully, and because the person giving it does not understand how it is being given and why, and he does not watch the patient. It is one of the most valuable aids in the treatment of tuberculosis, if given carefully. The skiagraph is another important aid in diagnosis, and shows some things absolutely impossible to learn in any other way—the healed tuberculous lesions.

DR. JOHN NORTH, Toledo: The tuberculous pulse differs from every other, furnishing a means of early diagnosis. This peculiar pulse will occur two years before the case can actually be diagnosed by physical tests. If a patient has the full proportion of calcium in the body he is immune from tuberculosis. The tuberculous patient eliminates lime, he cannot assimilate it, and the things that give the best results are milk and eggs, both of which contain a large proportion of calcium salts. Put them in condition to assimilate by hydrochloric acid, and they improve. The pregnant mother has tuberculosis because she has taken the lime from her body to build up the body of the baby.

DR. L. A. LEVISON, Toledo: In using the test of von Pirquet if the reaction is not at all positive, if one will wait until the next day and inject a small dose subcutaneously, there will be a reaction, even when the dose is not enough to induce a rise of temperature. This is valuable in cases where it is not advisable to use the old methods of Koch.

DR. WILLIAM E. HOVER, Lima: All people who have cold hands and feet, who dread to sit in a draft, who will not eat beef steak cooked rare, and who cannot or will not take milk, should be looked on as having incipient tuberculosis and treated accordingly, whether they react to the test or not.

DR. OSCAR BERGHAUSEN, Cincinnati: In considering the primary pathology it is often found that the infection occurs from a primary bronchial lesion. It must be borne in mind that there may be a primary lesion in the kidneys, and if this is suspected, care must be taken not to set up a complication through the use of the tuberculin test.

DR. J. P. DEWITT, Canton: The main point I wished to bring out is that patients apparently recovered from tuberculosis by the use of rest, food and fresh air, are not well and will react to tuberculin, and a great many do relapse; but patients who have in addition immunizing doses of tuberculin have a different appearance, and they do not relapse.

The Treatment of Pneumonia

DR. JAMES L. TRACY, Toledo, sought to emphasize the importance of studying the treatment with reference to the biology of the disease. The cells in the lungs whose functions are so directly impinged on by the diplococcus call to their aid and defense the functions of co-ordinate and interdependent cells, and from these in turn go out calls for organic functional assistance, and that functional assistance which is so promptly rendered is made up of those abnormal functional processes by whose functions is constructed the lymph dam of diplococcus infection; and the specific characteristics of the lymph dam for the diplococcus shows a prearranged preparedness of systemic integrity for resistance to that particular infection. None of the emergency processes can be absent from the general plan for systemic defense without rendering the other processes ineffective. They fit one into the other as the physiologic processes fit one another, and together these unusual organic functional processes are, biologically, as really and intelligently as defensive of systemic life as are the usualy organic functions of the body, biologically, constructive and conservative of systemic life. This being so, it is therefore wise, and hence scientific treatment of pneumonia, at the first visit, to confine the efforts at helpfulness to the patient to the furnishing of sustenance to these organs which are so excessively functionating; the treatment must be hygienic and dietetic.

The Protection of Child Life

DR. C. O. PROBST, Columbus: Human life, which means productive energy, should be regarded as the main one of our natural resources. The state could greatly extend and perfect measures that have already in a limited field proved effective, as the control of the milk supply, the education of dairymen and parents. It could place one or more honest inspectors in each county to enforce its requirements, and might have a traveling dairy exhibit along the lines of the tuberculosis

exhibit. More progress would be made if no further effort were made to "teach old dogs new tricks," but attention should be devoted to the training of the school children in hygiene and sanitation and physical education. This would mean a new man in school life, a school physician; it would mean school supervision, not school inspection.

Most of the school books could be utilized to teach certain health subjects. Sums in arithmetic could deal with sanitary problems as well as interest or land measurement. In teaching geography, maps might show the relative prevalence of tuberculosis in different countries, and in history the great plagues could be recalled to show the blessings of improved sanitation and vaccination. If great deeds are to be chronicled to inspire patriotism, why should the heroes of godless wars be selected rather than the heroes of life-saving, preventive medicine, who have laid down their lives in battling against or searching for the cause of pestilential disease? If presidents, and members of congress, legislatures, councils and school boards had themselves been given such instruction, efforts for a national health department would be vastly easier of attainment. Education in matters of health should be begun with the grandparents of children to be born fifty years hence.

Three Years of Serum Therapy in Epidemic Cerebrospinal Meningitis

DR. WILLIAM S. CHASE, Akron, Ohio: In the serum-treated cases, after one or two subdural injections, the cerebrospinal fluid becomes clearer. Microscopically, there appears a preponderance of intracellular meningococci and the nuclei no longer take the stain well. There is a decrease in the leucocytes in the spinal fluid and also a fall in the general leucocyte count. In the cases which react favorably, within twenty-four hours the temperature falls, frequently to normal; all symptoms of hyperesthesia are greatly reduced and the patient passes from a period of wild delirium to one of perfect quiet and complete consciousness. Subsequent exacerbations in these cases are less so severe and improvement follows other injections. It is interesting to note that the neck rigidity and the Kernig sign are usually the last symptoms to disappear, and frequently continue well into convalescence. The average duration of the disease in the serum-treated cases is about two weeks, as against five or six weeks of tedious illness in those which went on to recovery under previous methods of treatment. Complications are practically suppressed. In the cases injected early deafness is common.

The earlier the serum is given, the greater is the chance of recovery. Work done in the French epidemic last year suggests the strong probability that cases treated with the subdural injections in the early prodromal stage may be aborted. Lumbar puncture should be performed as a diagnostic measure in all suspected cases.

DISCUSSION

DR. ZINNINGER, Canton: Flexner has been wise in restricting the use of the serum to men who could confirm their diagnoses by scientific methods. If there is to be improvement in the use of the serum, either it must be in its production or in the technic of its administration. One of the most interesting things to consider is whether there are different strains of the diplococcus, and Flexner is working on this question now. It is known that this is true of other cocci, and those following the methods of vaccine treatment know that an autogenous vaccine is superior in nearly all cases to that made from the stock vaccines.

Exudative Erythemas and Their Visceral Manifestations

DR. MARK R. BROWN, Cincinnati: My paper refers to those involvements of the skin characterized in one instance by serous exudate (angioneurotic or localized edema); in another by serous exudate plus hyperemia (urticaria); in a third by serous exudate plus hyperemia and hemorrhage (erythema multiforme); and in a fourth by exudation or extravasation of erythocytes (purpura). While any of these conditions may present itself alone, their not infrequent relationship with arthritis or with certain serious and well-marked visceral lesions, or both, renders the symtpom-complex interesting to internists. In different attacks in the same individuals, different manifestations or combinations may be present and give rise to varied diagnoses—Schoenlein's disease, Henoch's purpura, angioneurotic edema or urticaria—all of which may have been correct in so far as that particular attack was concerned. As to internal changes, the most important are those involving the heart, as endocarditis and pericarditis; the kidneys, as nephritis; the gastrointestinal crises, and hemorrhages. The symptom-complex then promises a number of skin lesions, a variety of internal disorders and an arthritis of varying intensity.

In five of seven cases arthritis was present, and in the two remaining arthritis had been present in previous attacks. Occasionally there is synovitis or periarticular inflammation; but one is impressed with a relationship to articular rheumatism, particularly as there was, in several instances, a preceding or coincident tonsillitis. All patients with arthritis had some fever. Sweating was not present. Eruption was present in considerable variety. In all but two there was purpura hemorrhagica, in three localized edema, in one urticaria, in one erythema nodosum, in two erythema multiforme, in one vesiculation. In several, different cutaneous manifestations occurred at the same time, in others there were different eruptions at different attacks. There were two cases of acute endocarditis, two of acute nephritis and in two others hematuria. In one there was chronic nephritis from the onset, but no blood was found. In three there were abdominal cramps, in one pleurisy with effusion, followed by dry pleurisy on the other side.

Pulmonary Manifestations of Syphilis, with Report of Cases

DRS. H. W. DACHTLER and R. P. DANIELLS, Toledo: During the past year, in examining about ninety patients for pulmonary tuberculosis, and studying the condition of the lungs with the help of the skiagraph, most of the cases were found to be uncomplicated tuberculosis, a few were mixed infections of tuberculosis and syphilis, while six cases came under observation which proved to be uncomplicated syphilis of the lungs. The patients came or were sent because they were losing weight and had a slight fever; some had a little dry cough; all were easily fatigued, and they, or members of their families suspected beginning consumption. These six cases are reported because they suggest that a syphilitic condition occurs more frequently in the lung than is usually suspected, and because it closely resembles the early stages of pulmonary tuberculosis. In all the cases tuberculosis has been eliminated first by no reaction to 12 mg. of Koch's old tuberculin given hypodermically; and second, by no signs of tuberculosis demonstrable in the skiagraphs. Moreover, syphilitic infection has been proved either by a direct history of infection or by a history of miscarriages with other syphilitic signs and symptoms, and a rapid improvement on antisyphilitic treatment, and in one case by the Wassermann reaction. From the study of these cases, we believe that a syphilitic condition of the lungs occurs more frequently than is generally suspected, and that without doubt it is often treated for pulmonary tuberculosis.

Intravesical Operations, with Report of Cases

DR. CHARLES M. HARPSTER, Toledo: With the cystoscope we are able to see many conditions rather than diagnose them by symptoms, such, for instance, as papillomata, sarcomata and carcinomata, foreign bodies of all sorts, ulcerations and their character, cystitis and its mode of infection, prostatic and pericystic enlargements, the condition of the ureteral orifices, activity of urinary secretion, absence of either kidney, double ureter on one side, hematuria following renal colic, tuberculosis of renal carcinoma, and various infections of kidney and bladder. In time to come the cystoscope will be used more in catheterizing the ureters, in applying suction or hyperemic treatment to bladder conditions or in drawing urine from the ureter and in making applications to diseased areas, in the removal of foreign bodies, removal of growths by snare, incision of strictured ureters or their dilatation, and many other operations and procedures. Ureteral catheterization is of service in showing the patency of the ureters, in obtaining separate urines and in finding calculi, crystals, epithelium, casts and tuberculous material and determining the competency of either kidney. With a bismuth fused catheter

x-ray confirmation of diagnoses may be made, and the catheter may be used during gynecologic operations to prevent injury to the ureter, as is done by Olshausen and others. The Luys separator is useful for diagnostic purposes where the condition of the bladder has been previously determined by the cystoscope. Errors which may arise with either the catheter or the Luys separator are due to faulty instrumentation, reflex oliguria or polyuria caused by the instrument or the collection of urines at inappropriate times. Two factors are necessary with catheterization to give accurate quantitative results—a catheter with a terminal opening, and Albarran's method of methylene blue injection into the catheter. In prostatic enlargements of old men in whom general or spinal anesthesia are contraindicated the technic and instruments of Goldschmidt are useful. Under a 2 per cent. solution of novocain the obstruction, especially if a bar or medium projection, can be incised under the guidance of the eye. With the old Bottini instrument or the Freudenburg modification this could not be done. Multiple incisions cause contraction of the gland. One out of every four cases of prostatic hypertrophy is cancerous. This method of treatment offers hope of preventing cancerous development by relieving increased tension and pressure on the gland and decreasing the irritation from residual urine. If it will stay or prevent cancerous development in even a small number of cases in the inception of the condition its use must become a fixed proceeding in surgery.

AMERICAN NEUROLOGICAL ASSOCIATION

Thirty-sixth Annual Meeting, held in Washington, D. C., May 2-4, 1910

(Concluded from page 158)

Myositis Fibrosa Following Nervous Breakdown

DR. JOHN K. MITCHELL, Philadelphia: A nervous breakdown from overwork was followed by an attack of fever of unknown origin, with great prostration. Four months later a stiffness in the extensors of one thigh was noticed. A like stiffness and hardness successively appeared in muscles of other parts. This increased in degree until the patient was almost crippled. A portion of muscle excised during life exhibited widespread fibrous degeneration, the muscle fibers being in some places replaced by fibrous tissue, in others pushed aside by it. In cross-section radiating striæ, apparently of fibrous tissue, are seen. The patient improved under treatment.

Friedreich's Ataxia

DR. WILLIAM G. SPILLER, Philadelphia: In this case, in addition to the usual findings in the spinal cord, the peripheral nerves were greatly degenerated; recent degeneration detectable by the Marchi method was seen in some of the muscle fibers, and the cerebellar nuclei showed alteration of the nerve cells. Many naked axis cylinders were detected by the Bielschowsky stain in the columns of Goll, which by the Weigert hematoxylin stain appeared almost completely degenerated. Friedreich's ataxia is not a degeneration confined to the spinal cord or cerebellum, but is the result of implication of the entire central and peripheral nervous systems.

DISCUSSION

DR. E. W. TAYLOR, Boston: In one case which I studied there was a striking degeneration of the cerebellar tract and of Gower's tract. I would ask whether Dr. Spiller was able to trace this degeneration of Gower's tract into the cerebellum, and whether anything has been done toward tracing Gower's tract and the cerebellar tract toward their terminations.

DR. B. SACHS, New York: The distinction between Friedreich's ataxia and amaurotic family idiocy is interesting. In hereditary ataxia we evidently have an involvement chiefly of tracts of peripheral structures, and no doubt there is some cellular involvement as well, while amaurotic family idiocy is a purely cellular disease. Some years ago these cases were spoken of as cases of arrested development. These family diseases would not occur if there were not some vital defect in the germ plasm. That vital defect makes the organism less resistant to extraneous influences or to influences within the body than it would be if this vital defect in the germ plasm did not exist. I do not believe that any family disease can be due to an extraneous toxic or infectious agent, but an infectious agent that is formed within the body itself is conceivable, particularly if you admit that the injury done to the germ plasm in the first place makes the various structures of the body less resistant to poisons formed within the body itself.

DR. W. G. SPILLER: The Wassermann reaction was not taken, but there were no clinical manifestations of syphilis. The pathology shows no round-cell infiltration, such as is characteristic of the nervous system. Gowers' tract was not degenerated, although in many cases of Friedreich's ataxia it has been. Cellular changes are not usually found in Friedreich's ataxia, according to report. The nucleus dentatus in this case showed decided cellular changes. There were also some changes in the cortex.

Freud's Analytic Method

DR. JAMES J. PUTNAM, Boston: In so far as Freud has shown us a valuable means of studying the processes which go on unconsciously within our minds and the respects in which they lead to traits of character and temperament, it is difficult to see how any one can fail to recognize the importance of his work. Most of the criticisms have come from persons who have failed to verify his conclusions. However, the more carefully and thoroughly the method is applied, the more accurately the conclusions derived from it will be found to coincide with those laid down by Freud and others who have followed in his footsteps. It is obvious that the talents and interests of neurologists are not all of the same sort, and for those to whom the study of the mind in health and in disease appears the most important portion of the physician's work, the contributions of this relatively new field are certain to seem of marvelous promise and of immense practical importance.

DISCUSSION

DR. G. L. WALTON, Boston: One important difference between these memory pictures and those of the waking life is the inability of the dreamer to measure time and space; but the main distinction lies, perhaps, in the absence of goal ideas and of the power of control which enable us in our waking hours to guide our thoughts more or less successfully in definite channels. The associations by which these pictures are assembled will vary with the individual and be tinged by his emotional tone, but to read into them, however ingeniously, the fulfilment of desires is to strain a point, and to substitute a preconceived notion for the study of facts. To credit mere memory pictures, distorted at that, with being symbols is unduly to glorify the dream state—I should perhaps rather say unduly to debase it when the symbols are of the character which permeates the works of this author. The reproduction of a dream in detail, and its analysis, is not only baffling and valueless in my opinion, for medical practice, but may be harmful.

DR. B. SACHS, New York: I would agree with anything of Freud's if I could feel that his teachings were absolutely sound. There are several practical reasons why they do not appeal to me: the first counts least, that is, the length of time the examination takes and the smallness of the result. The most serious objection to the method is that it has had a distinct sexual taint given it. It may be of great interest to the neurologist to find out that some sexual misconception or some disagreeable sexual thought had existed in that person in early years; but, while it may be of great interest to the physician, and while it may not do a woman of 40 any harm to have her psychic analysis made as carefully as Dr. Putnam has performed it, it is my firm conviction that we do no good by taking a young woman of 14 to 20 and pushing her thought back on that one sexual mistake, not a conscious sexual mistake, that was made early in life. I cannot see that the therapeutic results have been any better, nor have they been arrived at any quicker than by the older methods.

DR. C. L. DANA, New York: My practical experience has been not only of failure, but often of disaster with Freud's method. It has often at times been most unfortunate, and I

have practically stopped giving any such treatment in cases of at least the more educated, more intelligent type of patient that comes to me. In the minor cases of this class of psychoneuroses I find that by ordinary methods of treatment, education and modern therapeutics the patients get well. I always tell psychasthenic patients that they will get well, and they generally do. It must be remembered that a certain number of patients run a course, and recover, whether you do anything or not, in one or two years. There is another group of cases, more serious, which date back to early life; these are serious cases. I have not been able to do much with them. If this method will successfully help them, it will be of value, but I do not see exactly how the method could explain or help a condition which is essentially constitutional. The quickest way of getting at the inside of these cases is to do what we practically all try to do and often succeed. I take cases of this kind, put them in a private hospital and give them an intelligent nurse. I go to see them often, and send masseurs whom I know to be intelligent women or men to give them treatment, and by every process that I know of I become acquainted with their story. In two or three weeks one learns about these patients, one knows their past history, and I do not believe you can get as much by the Freud method as by our present method. I think we have much better methods than that of Freud.

DR. L. F. BARKER, Baltimore: Freud's method should be tested carefully. It is too early to say how much good will come of it, but certainly a large amount of new knowledge concerning the psychology of these patients, the psychology of life generally, is being derived from these studies. I think we should separate the method of psychoanalysis from the purely sexual idea. In my application of psychoanalysis it has been very helpful, especially in extending the anamnesis. As to psychasthenic cases, my experience with them is that they are hereditarily badly endowed people. They start badly. Most of them come from generations of neurotic people. I have in mind some cases under my care where for three generations this condition existed. This may come at any time of life, though most of them have attacks early in life.

DR. C. K. MILLS, Philadelphia: I am not in accord with Dr. Putnam's views. The reports so far have not been altogether satisfactory. The cures do not seem to be in greater number or better than those obtained by the old methods.

DR. H. T. PATRICK, Chicago: Dr. Putnam's method does not differ so very much from the ordinary methods of psychoanalysis. It seems to me that psychoanalysis, or whatever leads us to get back to the definite original cause of any phenomenon in the abnormal patient, or the beginning of what has been the series of abnormal phenomena, is a help. What I believe to be distinctly injurious is to encourage the patient to probe himself when he is by himself, without control and without the leading intelligence of his physician, into his past life because patients are unable to observe facts without conclusions, to observe phenomena without interpretation, and it is particularly these neurotic, poorly balanced, hypersensitive people who are constantly drawing wrong conclusions. This is distinctly dangerous, and it is that particular part of the Freud method with which I am at variance.

DR. A. A. ESHNER, Philadelphia: These patients are already unduly subjective and introspective, and care should be taken not to make them more so as a result of a certain form of interrogation. Herein appears to reside a danger entitled to serious consideration.

DR. H. N. MOYER, Chicago: I am a disciple of Putnam rather than of Freud. Anyone who undertakes to practice Freud's analysis on his patients on their first visit to the office will soon have no patients. That is obvious. The older methods are to be adhered to for a certain time. As to the psychoanalysis of impotence, the physician who neglects to look for some prostatic trouble or stricture will probably fail. The old methods are efficient, as a rule, but there is a certain residuum of cases not relieved by ordinary methods and for whom is left this psychoanalysis. It is a distinct, adequate, efficient method of getting at a few cases that we had not succeeded with before until it was offered to us.

DR. P. C. KNAPP, Boston: There is one radical defect in Freud's general position which has not been touched on. We see almost every day cases of nervous disturbance of one sort or another due clearly and confessedly to some pronounced emotional disturbance. The patient improves as the emotional disturbance is put into the background and forgotten. It does not seem always to be a reasonable method of treatment in those cases which are due to a forgotten emotional disturbance to drag that once more into the field and get the patient to dwell on it. It seems to me this is the primary unreasonableness of the views of Freud. There is a tendency to consider the data derived from the psychoanalytic methods as being absolutely accurate, but I have not always found them so.

DR. J. J. PUTNAM: There is a great deal of misunderstanding of this sexual questioning. One does not take a young unmarried girl and begin to talk about her sexual relations. It would be very extraordinary if anyone should do that. The sexual ideas are the ones that the patient himself brings out. That Freud has always contended. The persons who speak as though the sexual thought were brought out in these patients' minds have failed to recognize that they are suffering from these thoughts, and the purpose is not to dwell on sexual thoughts, but to relieve their minds from sexual thoughts which in another form are active and producing symptoms. As to the objection to the patient's probing himself, it is injurious to him to probe himself alone, and it is to prevent the patient from doing this that the patient is encouraged to probe himself before the physician; the patient probes himself alone from morning to night otherwise, and it is to make it impossible for him to do this that we use this treatment.

General Conception of Dementia Præcox

DR. ADOLF MEYER, New York: The studies of metabolism and toxic state so far furnish nothing specific or decisive in regard to dementia præcox. The neurologic and histologic data appear rather as incidental to more clearly definable functional data than with a leading rôle. The data of conduct and behavior and of reactive material of the patients have proved much more directly helpful in furnishing constructive material. According to the make-up, the same results may be reached by combinations of marked constitutional peculiarity and slight external cause, and slight overt constitutional peculiarities and marked external cause. The essential is the break of compensation of mental (chiefly emotional and volitional) adjustment, with more or less deficit—and in most cases with the peculiar attempts at balance and reconstruction which constitute the glaring surface-picture of the clinical description and the special mechanism of the analytical consideration. Evidence seems to favor the postulate of a departure from the Kraepelinian dogma. Dementia præcox is essentially unlike general paralysis and more likely the usually inevitable outcome of (1) conflicts of instincts and (2) incapacity for a harmless constructive adjustment.

Some of the Mental Mechanisms in Dementia Præcox

DR. AUGUST HOCH, New York: In certain paranoia states, such as those described by Rüdin and Gaupp, also in a certain type of psychosis recently analyzed by Birnbaum, the content of the psychoses represents conflicts and reactions to conflicts which the individual, owing to a constitutional defect, was incapable of handling adequately. The clinical picture of dementia præcox is much more complicated and often presents apparently a disconnected array of manifestations. When it is possible to analyze these, however, it is found that all the experiences mean something to the patient; that certain Freud mechanisms are at work, and that these apparently disconnected symptoms are connected and related to definite trends. The frequency with which sexual conflicts are found in the history of such patients and the fact that so often sexual trends make up the content of the psychosis, point to a lack of sexual adaptation. Our memories are grouped, as it were, in more or less extensive and more or less circumscribed complexes or centers of attraction, in the formation and cohesion of which special interests take an important part. We can conceive of the mind, therefore, as made up essentially of trends of interest. In the course of individual development certain main tendencies of the personality develop

which then take the lead, while other tendencies become repressed. These repressed trends exert nevertheless a marked influence on the conscious thought and activity, as Freud has shown; but in normal life they do so mainly through the fact that the energy they supply is led into profitable channels. Every trend naturally pushes toward a realization in the direction of its feelings. If this is in harmony with the main tendencies of the personality this is useful and represents the dynamic force behind our thinking and our pursuits, adapted to the environment and the given situation. If, however, trends which are not in harmony with the main tendencies of the personality and which are, therefore, under the influences of repression, no longer find an outlet in profitable channels, but assume a more or less independent dominating rôle, it is not to be supposed that the laws which govern normal mental activity should be suspended; on the contrary, we shall expect to find the same principle of the trend pushing toward its realization, while at the same time the other tendencies of the personality assert themselves in repressing influences as well as in adjustment reactions, but owing to the disturbance of balance between the usurping trend and the main tendencies of the personality, the thinking and acting is then no longer adapted to the actual situation, but appears as something strikingly out of contact with it, and is of a simpler, more crude type. This, in so far as the mental side is concerned, is what seems to take place in the cases of dementia præcox which can be analyzed the overgrowth of certain trends at the expense of the main, adapted interests of the personality.

Errors in the Diagnosis of Mental Disease

DR. E. E. SOUTHARD, Boston: A series of 250 cases of mental disease, with *intra vitam* diagnoses by several physicians, recorded at the Danvers State Hospital daily clinics 1904-8, has been subjected to anatomic review for the sake of learning where lies the greatest difficulties in diagnosis. Ten cases (4 per cent.) remain both clinically and anatomically obscure. Seven cases (2.8 per cent.) had diagnostic doubts settled after the clinic, either *intra vitam* or postmortem. Sixty-six cases (26 per cent.) were doubtful clinically, but the correct diagnosis was obtained by one or more diagnosticians in 49 of the 66 (74 per cent. of the doubtful group). One hundred and eighty-four cases (74 per cent.) were clinically certain, and the clinical diagnoses were confirmed (or not altered) by autopsy in 163 of the 184 (89 per cent. of the unanimous group). The correct diagnosis was obtained by one or more diagnosticians in 212 cases in 250 (85 per cent.). The "correctness" of these diagnoses is subject to some reservation, (1) since within the "organic and senile dementia group" differentiation proved difficult, and (2) since anatomic "consistency" often signifies absence of characteristic lesions. The acute psychoses have been reviewed, however, bearing in mind modern views. Several alcoholic cases failed to exhibit striking brain lesions. The majority of the real diagnostic difficulties uncovered by this analysis would appear to require more intensive work in the field of clinical pathology.

The Differentiatives of Dementia Præcox and Depressed States By So-Called Biologic Blood Tests

DRS. E. C. WHITE and S. D. W. LUDLUM, Philadelphia: We seem to have been able to differentiate between dementia præcox on the one hand and melancholia on the other. Our method is based on the determination of the fixation complement of guinea-pig serum by the serum of the patient. We found in melancholia that the amount of complement absorbed was very much larger than of all other diseases studied; and also much larger than dementia præcox, in which disease it was approximately normal. We have tested 67 cases of various mental diseases. Thirty-seven melancholics of manic-depressive type and involutional forms have so far been decisive and characteristic in all tests. We also found that by carefully standardizing the factors in Much's test it gave a positive test only in dementia præcox. When the standardization was not done, a positive result was often obtained. The syphilitic cases, of course, can be separated by the Wassermann reaction and progress in biologic tests is making it possible to discover chemical changes in so-called functional diseases.

Clinical Significance of the Urine in "Nervousness"

DR. EDWARD B. ANGELL, Rochester, N. Y.: I have noted for a number of years in examination of urine of patients afflicted with "nervousness" that in making the Heller nitric acid ring test there is formed at the junction of the urine and acid a pigment ring which varies in color from bright red to dark brown. Of the chemical nature of this ring I am unable to give any account, but believe I am safe in saying that it probably consists of some of the organic nitrogen compounds. It is a reaction entirely different from that given by indican or bile, although these substances may be associated. A similar reaction occurs in cases of exophthalmic goiter and in persons taking iodid of potash. That it is associated with excessive nitrogen elimination is shown by the fact that it is almost never present on a non-proteid diet. The patients who show this reaction are those who complain of headache, backache, restlessness, sleeplessness, numbness and a general depressed feeling, associated with other symptoms generally classed as nervous. If such patients are put on a diet low in nitrogen, lead an open-air life and are given salicylates and alkalies to aid elimination, they will be relieved of their symptoms and at the same time this reaction of the urine will disappear. From two weeks to two months are required for a cure. In obstinate cases a year may be required.

Radiculitis of Cervical and Brachial Plexuses, Secondary to Pachymeningitis Externa Cervicalis-Gummatosa

DR. F. W. LANGDON, Cincinnati: A white man of 33, married, occupation superintending out-door work, grading, etc., gradually developed a paralysis of tetraplegic distribution, beginning in left forearm and hand, and extending in the course of 14 months so as to render useless all four extremities. The upper extremities were flaccid, the lower spastic with plus knee-jerks and Babinski sign. The paralysis was preceded by sharp pains in left neck and face. Neck movements were almost abolished—not by paralysis of muscles, but by articular obstruction. Numbness and tingling were extensively distributed over both arms and legs. A smooth firm, not bony, boss could be felt in the left side of the neck between the third and fourth cervical vertebræ. The patient was unable to walk without constant danger of falling and was unable to grasp a pencil with either hand. Vision was good; pupillary changes slight; ocular movements free, with slight nystagmoid jerking on extreme lateral excursion. Some dysphagia at times. No voice or tongue changes. Sensory changes slight, excepting the initial pain in the left neck and face which was not prominent after the first month. There was a hand-size area of tactile anesthesia over the left thorax and one twice as large over the right abdomen, where temperature sense was disturbed or confused. Diagnosis was made of an exudate (gumma) situated between cervical dura and periosteum enclosing the nerve roots and compressing the lateral columns of cord; a radiculitis and compression myelitis, secondary to pachymeningitis externa. Under mercury by inunction and supporting measures steady improvement occurred and patient was discharged at his own request in five and one-half months, having gained 25 pounds in flesh and the use of all extremities. Three months later he resumed his regular occupation. A year later he is able-bodied, can use pick and shovel well whenever necessary and attends to his full duties in every respect.

The Ocular Changes in General Paresis and Tabes Dorsalis

DR. EDWARD D. FISHER, New York: The examination of fifty general paretics confirms my former statement that optic atrophy and ocular muscle paralysis are comparatively rare in general paresis as compared to their frequency in tabes; nor, again, are the muscular paralyses permanent, as a rule. Clinically, this would seem to mark out the two diseases as distinct. In the 50 cases only 2 had optic atrophy and none any third nerve lesion outside of the Argyll-Robertson pupil. In the cerebral type of general paresis, that is, those cases of exaggerated reflexes, the Argyll-Robertson pupil is often absent in the early stages. Among over 200 cases of general paresis only one presented a history of tabes extending over a number of years preceding the mental symptoms with lightning pains, crises and ataxia.

Lenticular Zone and Anarthria

DR. ALFRED GORDON, Philadelphia: A case which I saw shows that Marie's contention in regard to aphasia cannot be entirely confirmed by the pathologic findings. The destruction of the lenticulo-caudate nuclei was complete, and yet the patient did not present the least indication of anarthria or dysarthria. The speech was clear and distinct. The patient did, however, present a partial word-blindness and partial verbal amnesia, all symptoms of sensory aphasia. The few symptoms of the latter correspond to Marie's ideas. The conclusion to which my observation leads me is that while the so-called lenticular zone of Marie may play a certain rôle in sensory aphasia, its rôle is not considerable. As to its being a center for anarthria, the present case proves that its destruction does not interfere with phonation and articulation of words.

Medicolegal

Care, Skill and Diligence Required of Physicians and Surgeons —Malpractice Suit Brought Four Years After Alleged Loss of Eye by Phenol—Burden of Proof and Presumption

The Supreme Court of Alabama says, in Shelton vs. Hacelip (51 So. R. 937), that in McDonald vs. Harris, 131 Ala. 359, the legal measure of care, skill and diligence of physicians and surgeons is thus defined: "The reasonable and ordinary care, skill and diligence which the law requires of physicians and surgeons is such as physicans and surgeons in the same general neighborhood, in the same general line of practice, ordinarily have and exercise in a like case." It was for the alleged breach of this duty that this action was instituted practically four years after the wrong complained of was alleged to have been inflicted. The damnifying result was averred to have been the loss of the eye of the then 11 months old child, Velma Hacelip.

These facts were undisputed on the record: That Velma had been affected with chickenpox and nausea, and the right eye (the one destroyed) was inflamed, ulcerated in the external corner, had scabs on it, and was infected with pus and "septic poison." That the defendant Shelton was called professionally to see her, mainly, it appeared, for the eruption and the nausea. That he examined the right eye, and stated that he would give a prescription for its treatment, and at the same time instructed the parent to keep the organ cleaned with the frequent application of warm boiled water. That what was received as this prescription was used by dropping three or four drops, from a teaspoon, into the eye after lifting the eyelid. That this application was made in the afternoon about 2 o'clock. That the child at once gave evidence of being in great pain in that eye, and, with its hands, rubbed off the scabs and introduced the poisoning pus into the eye. That the sight of the eye was destroyed when examined on the succeeding morning, the destruction being accomplished by the thickening of the tissue over the sight of the eye.

The evident theory of the plaintiff on the trial was that the liquid introduced into the eye contained phenol (carbolic acid), and that the destruction of the sight resulted from that. It was obvious that, if the loss of sight was due to disease, the defendant did not breach his duty, unless in the treatment thereof he failed to measure up to the standard stated before; and it was equally as obvious that the plaintiff's theory excluded any other means or omission leading to that breach of duty in the premises except that rested on the use of phenol in the prescription written by the defendant in the treatment of the eye. A druggist and the defendant both testified that the prescription written by the defendant was prepared by the druggist, and not by the defendant, and that in it there was no ingredient of phenol. Another physician, who saw the eye the next day, testified that the eye nor lid nor face gave any evidence of having been burned with phenol, and that in his opinion the loss of sight was due to the disease. There were some tendencies in the evidence to the effect that the preparation contained phenol, the chief of which were afforded by the testimony of two witnesses that the contents of the bottle bore an odor of carbolic acid, and that the sediment in the bottom of the bottle was similar to that made by an excess over a solution of phenol.

The burden of proof in cases of this character is on the plaintiff to show that the defendant's care, skill, or diligence in the given case was not that required, as stated, of physicans and surgeons; and it should be added that there is no presumption of negligence or want of skill from the failure to cure.

It is evident from this record that the controlling issue was whether the preparation applied to the eye was that prescribed by the defendant. As indicated, there was some evidence tending to show that the preparation was that prescribed by the defendant, and that it contained phenol. It consisted of the testimony of a Mrs. Daniel, the "next friend," by whom the suit was instituted, that the defendant brought the bottle to the house where the child was, and that out of this bottle the liquid was put into the eye. It must be conceded, however, that there was a conflict in respect of the issue stated; and, in the light of all the evidence, the court entertains the opinion that the weight of evidence and the probabilities of the truth of that tending to fix liability on the defendant were so strongly against the verdict rendered in the plaintiff's favor as to carry conviction that it was wrong and unjust.

In the first place, the long period of time elapsing between the injury and the institution of the action, in connection with the undisputed fact that the defendant was subsequently often called professionally to treat members of Mrs. Daniel's family, were circumstances impossible to be ignored in determining the weight to be given to Mrs. Daniel's testimony. In the second place, the testimony of a physician who was called as a witness might be taken at the limit of its probative value, and yet, when boiled down, it amounted to nothing more than that the injury "might"—a term, as employed, no stronger than possibly—have been produced by phenol, or "might" (i. e., possibly) have resulted from a virulent form of conjunctivitus. There was for the plaintiff no evidence that the eyeball or its membranes were burned by a caustic. There was a total absence of proof that any sloughing occurred. It is incredible on the evidence adduced as to the effect of phenol that the iris could be altered in color from brown to white by the application of phenol and at the same time avoid sloughing of the cauterized membrane.

The original prescription was before the court. Phenol was not one of its named elements. The other physician first mentioned, who saw the eye the next day, was positive that there was no evidence of cauterization about the eye or face. Two witnesses said there was an odor of phenol, and one that there was a cloudy sediment in the bottle. But the inevitable effect of phenol on membranes and the positive statement of the other physician, apparently disinterested, that there was no cauterization and no sloughing, and the testimony of the druggist and the defendant, all in connection with the long lapse of time between the injury and the commencement of the action and the continuance of the defendant in the professional service of the household, compel the conclusion that phenol did not destroy the child's sight.

Insane Delusions and Unreasonable Habitual Prejudice

The Supreme Court of Illinois says, in the will case of Snell vs. Weldon (90 N. E. R. 1061), that, in analyzing the legal conception of an insane delusion, it is necessary to keep in mind that the ultimate and essential thing to be established is that the testator had, at the time the will or testament was executed, such an aberration as indicates an unsound or deranged condition of the mental faculties, as distinguished from the mere belief in the existence or non-existence of certain supposed facts based on some sort of evidence. A belief which results from a process of reasoning from evidence, however imperfect the process may be or illogical the conclusion, is not an insane delusion. If, under the facts shown, the court is able to see how a rational person might have believed all that the testator believed and still be in the possession of all his senses, an insane delusion is not established. Where a

testator has some actual grounds for the belief which he has, though regarded by others as wholly insufficient, the mere misapprehension of the facts or unreasonable and extravagant conclusions drawn therefrom do not establish the existence of such a delusion as will invalidate his will.

Furthermore, while it is true, as said by this court in the former opinion in this case, that "injustice, unfairness, prejudice, or anger without a reasonable cause does not disqualify any person from making a valid will," still, where these manifestations habitually appear in respect to the same subject without any reason, and are adhered to after their falsity is demonstrated, they become strong and satisfactory evidence of a mental derangement, and evidence of their existence, without any cause, in respect to one so nearly related as to be naturally entitled to the testator's bounty, is entitled to greater weight than it would be if the parties were not so closely related.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

Medical Record, New York

July 2

1 Surgery as a Science and Art in the City of New York in the Middle of the Last Century. S. Smith, New York.
2 Superficial and Deep Sensory Disturbances in Their Relation to Astereognosis and Asymbolia. A. Gordon, Philadelphia.
3 Esophageal Diverticula. E. Mayer, New York.
4 Nasal Osteoma. J. H. Guntzer, New York.
5 *The Treatment of Chorea with Large Doses of Arsenic. G. B. Hassin and A. S. Hershfield, Chicago.
6 Abstraction of Calcium Salts from the Mother's Blood by the Fetus a Cause of Large White Kidney in the Former. J. G. Drennan, Chicago.
7 Precautions in Laboratory and Morgue that Lessen the Danger when Dealing with Plague. D. H. Currie, Honolulu, H. I.

5. **Treatment of Chorea With Arsenic.**—The authors have employed the Comby-Filatov method with success in four cases. No serious complications occurred, except vomiting in one case and edema of the eyelids and herpes in another. Hassin and Hershfield conclude that arsenious acid in the solution 1:1000 given in smaller doses than advocated by Comby are safer than Fowler's solution. This can be seen from one of these cases where a boy, 8 years of age, could safely bear 5 teaspoonfuls of 1:1000 solution of arsenious acid, i. e., grain 1/3 of arsenious acid, but showed symptoms of intolerance from 9 drops of Fowler's solution and this after his system had been somewhat used to the drug. The time of treatment is considerably shortened by using the acid; the improvement sets in very early, within a few days of treatment, and it is due, exclusively, to the use of arsenic. The authors do not consider it excusable to deprive chorea patients of the benefits of arsenical treatment on account of possible complications. The by-effects of arsenical treatment can be greatly mitigated by using arsenious acid and can be avoided if attention be paid to the condition of the gastro-intestinal and renal apparatuses.

Boston Medical and Surgical Journal

June 30

8 Method of Treatment in Infantile Paralysis. E. H. Bradford, R. W. Lovett, E. G. Brackett, A. Thorndike, R. Soutter, R. Osgood, Boston, Mass.
9 *Elimination of Hexamethylenamin by the Mucous Membrane of the Middle-Ear and Nasal Sinuses. W. M. Barton, Washington, D. C.

9. A preliminary note on this subject appeared in THE JOURNAL, March 12, 1910, p. 871.

New York Medical Journal

July 2

10 The Trend of Medical Education in the United States. W. C. Borden, Washington, D. C.
11 Torsion of the Omentum. J. W. Markoe, New York.
12 *High-Frequency Currents in the Treatment of Arteriosclerosis. T. E. Satterthwaite, New York.
13 The Cystoscope as an Aid to Diagnosis. S. E. Tracy, Philadelphia.
14 The Prostatic Urethra. J. A. Hawkins, Pittsburg, Pa.
15 Erroneous Deductions from Physiologic Experimentation with Ergot. A. T. Livingston, Jamestown, N. Y.
16 The Stimulatory Action of the Oosperm in the Uterus. J. Oliver, London, Eng.
17 Tuberculosis. E. C. Schroeder, Bethesda, Md.
18 *A Method of Examining Sputa for Tubercle Bacilli. E. H. Goodman, Philadelphia.

12. Abstracted in THE JOURNAL, May 28, 1910, p. 1811.

18. **Examination of Sputum for Tubercle Bacilli.**—The solution which Goodman uses is really Labarraque's solution, except that instead of 75 grams chlorinated lime, 150 grams are used, and in addition a solution of 3 per cent. sodium hydroxid. It is to the action of the chlorin and the sodium that its dissolving properties are ascribed. To the sputum is added an equal amount of the solution. The whole is thoroughly mixed with a glass rod, and put on a boiling water bath. After the sputum has become a homogeneous mass (from fifteen to twenty minutes) it is removed from the water bath, a small amount of water added, and the whole is centrifugated for five minutes in an electrically driven centrifuge. If more than one tube is used the supernatant fluid is poured off and the sediments combined, washed in the centrifuge with physiologic salt solution for three to five minutes, the excess poured off, and the residue smeared on a slip by means of a platinum loop. The specimens were stained in the usual manner. Apart from avoiding the necessity of using a patented substance the new solution has the advantage of being about one-fourth as expensive as the former. It is easily made in any laboratory, and where facilities do not permit of this, it may be made by a druggist.

Kentucky Medical Journal, Bowling Green

June 1

19 Tuberculosis of the Bladder. J. D. Mutters, Rush.
20 The Management of Normal Labor Cases. J. H. Hester, Mumfordsville.
21 Tonsillitis. S. J. Smock, Glasgow.
22 Acute Peritonitis. W. H. Yelton, Butler.
23 La Grippe. J. V. Young, Monticello.
24 Tuberculosis (Etiology). O. W. Brown, Lenoxburg.
25 Morphin—Its Uses and Abuses. R. E. Griffin, Owensboro.
26 Pyorrhea Alveolaris. C. C. Kemper, Owentown.
27 When Is Abortion Necessary? J. J. Rodman, Owensboro.
28 Perforation from Typhoid Fever. E. A. Stevens, Mayfield.
29 The Phenomena of Malaria. W. Blair, Glensfork.
30 Head Injuries. D. C. Donan, Horse Cave.
31 Practical Infant Feeding. P. F. Barbour, Louisville.
32 Work of the Southwest Kentucky Medical Association. W. L. Mosby, Bardwell.
33 Cerebrospinal Meningitis. S. M. Hopkins, Demossville.
34 Influenza or Lagrippe. C. Kendall, Morgan.
35 Acute Infantile Paralysis. W. A. McKinney, Falmouth.
36 Effects of Alcohol from a Scientific Standpoint. P. Ligon, Henderson.
37 Chloroform as a Dressing in Minor Surgery. H. H. Stallard, Hellier.
38 Empyema. A. P. Dowden, Eminence.
39 Why Maintain a County Medical Society? O. Allen, Cromwell.
40 Hookworm Disease. J. B. Jackson, Hopkinsville.

Medical Fortnightly, St. Louis

June 10

42 The Clinical Picture of Korsakoff's Disease Now and in 1886. S. G. Burnett, Kansas City.
43 Practical Results in the Surgery of Prostatic Obstruction: Presentation of Patients and Specimens. B. Lewis, St. Louis.

New Orleans Medical and Surgical Journal

June

44 The Problem of Eugenics. M. A. Aldrich, New Orleans.
45 Expert Medical Evidence at One Dollar Per Day. T. W. Schaefer and A. M. Wilson, Kansas City.
46 Uncinaria (or Hookworm Disease). D. W. Kelly, Winnfield, La.
47 Bacteriology and Pathology of Influenza. F. B. Gurd, New Orleans.
48 Gastrointestinal Grippe. S. K. Simon, New Orleans.

Journal Michigan State Medical Society, Battle Creek

June

49 The Relation of Gall-stones to Jaundice. A. McLean, Detroit.
50 Chronic Toxemias Arising from the Intestinal Tract. B. R Corbus, Grand Rapids.
51 Injuries and Repairs of the Pelvic Floor. H. B. Garner, Traverse City, Mich.
52 Aneurism of the Descending Thoracic Aorta. J. Flinterman, Detroit.
53 Tonsillectomy. J. F. Byington, Battle Creek.
54 Accidental Secondary Infection of the Free Peritoneal Cavity. T. A. McGraw, Detroit.

July

55* An Interesting Case of Retention of Foreign Body Below the Orbit. V. A. Chapman, Muskegon, Mich.
56 The Treatment of Acute Nephritis. E. Boise, Grand Rapids.
57 A Plea for Better Attention to the Newborn Baby. I. L. Poiozker, Detroit.
58 Vasostomy and Vasectomy in Acute and Chronic Gonorrheal Vesiculitis and Epididymitis. F. B. Marshall, Muskegon, Mich.

59 Serodiagnosis of Syphilis and Its Clinical Value. H. R. Varney, Detroit.
60 Hydatidiform Mole. G. Kamperman, Ann Arbor, Mich.
61 *A New Gateway to Certain Operative Procedures in the Abdominal Cavity. S. C. Graves, Grand Rapids, Mich.
62 Appendicitis. W. J. Herrington, Bad Axe, Mich.

55. **Retention of Foreign Body Below Orbit.**—In adjusting the sight of a Remington rifle, the patient used an enormous charge, about 90 grains of smokeless powder. When the rifle was discharged, it burst open at the breach. The patient received an injury of the face just below the left eye. There was a large gaping wound. It was cleansed and probed by a competent surgeon who decided that there was no foreign body present. The wound was closed and dressed and went on to uneventful recovery. Soon after this the patient began to have what he called a bad catarrhal discharge from the nose. This discharge also would drop into his throat from the nasopharynx. At times it would have a bad odor. Six weeks ago the old wound under the left eye broke open and has been discharging foul pus freely ever since. For years the patient has had double vision. The double vision used to be vertical; now it is horizontal and is worse lately. Ophthalmoscopic examination reveals a congested condition of the retinal veins. The appearance of the nerve head simulates optic neuritis. The general appearance is that of pressure on the optic nerve. The anterior wall of the antrum was freely removed. Far back in the antrum high up, and embedded in the posterior wall was found a foreign body. The tissues around about this were black. On cleaning away the debris the foreign body proved to be a large piece of the steel frame which confines the lock and mechanism of the rifle.

The end of this piece of steel which was deepest embedded was ragged and corroded with rust. The upper edge of the distal end was curved upward and was behind the eyeball. It was necessary, in extracting the steel, to raise the proximal end and depress the distal end in order that it could be extracted without injuring the eyeball.

The floor of the orbit was gone and the soft tissues of the orbit rested on the steel. This steel had penetrated so deeply that the distal end was lodged in the sphenoid bone and had almost entered the cranial cavity. It weighed exactly one ounce.

61. **New Abdominal Gateway.**—Graves makes an incision along the center of the rectus through integument, fascia and the anterior layer of the sheath; then the muscle is displaced outwardly and the incision deepened behind the normal center of the muscle through the remaining structures of the wall, viz., the posterior layer of the sheath, the transversalis fascia, the preperitoneal fat and the peritoneum, or the three latter in the absence of the first. Closure axiomatically is the reverse of the preceding.

Bulletin Johns Hopkins Hospital, Baltimore

June

63 Sir Charles Bell. E. R. Corson, Savannah, Ga.
64 A Special Function Discovered in a Glandular Structure Hitherto Supposed to Form a Part of the Prostate Gland in Rats and Guinea-pigs. G. Walker, Baltimore.
65 The Nature of the Secretion of the Vesiculæ Seminales and of an Adjacent Glandular Structure in the Rat and Guinea-pig; Special Reference to the Occurrence of Histone in the Former. G. Walker, Baltimore.

Journal Delaware State Medical Society, Wilmington

June

66 The *X*-ray Treatment of Carcinoma. W. S. Newcomet, Philadelphia.

Surgery, Gynecology and Obstetrics, Chicago

June

67 Joint Tuberculosis. L. W. Ely, New York.
68 Artificial Respiration. G. E. Fell, Buffalo.
69 Fractures of Pathologic Bones (Osteopsathyrosis) and Their Treatment. G. Beck, Chicago.
70 *The Increase of Cancer. W. B. Coley, New York.
71 The Value of the Shadowgraph Ureteric Catheter in the Diagnosis of Obscure Lesions of the Urinary Organs. H. L. Kretschmer, Chicago.
72 Postoperative Intestinal Obstruction. G. Woolsey, New York.
73 *Double Distal Ligation of the Common Carotid and Subclavian Arteries at One Séance for Innominate Aneurism. J. C. DaCosta, Philadelphia.
74 Intestinal Anastomosis. A. E. Benjamin, Minneapolis.
75 Sarcoma of Bone. G. Barling, Birmingham, England.
76 *New Operation for Prominent Ears Based on the Anatomy of the Deformity. W. H. Luckett, New York City.
77 Anomalous Kidney (Nephrectomy). B. M. Ricketts, Cincinnati, Ohio.
78 Venereal Papillomata. H. A. Moffat, Cape Town, South Africa.
79 *A Useful Stitch for Overlapping Fascia in the Closure of Abdominal Wounds. C. C. Norris, Philadelphia.
80 The Tuberculin Blister Reaction. H. de C. Woodcock, Leeds, Eng.

70. **Increase of Cancer.**—A great mass of evidence, based on vital statistics, shows a well-marked and steady increase in cancer in practically every civilized country. Attempts to explain away this increase as an apparent and not real increase are far from convincing. Without any further increase the present death-rate from cancer is appalling. Furthermore, the actual death-rate from cancer is much higher than the known rate by reason of the fact that in many cases of patients dying from internal metastases the strong prejudice of the relatives against the name of cancer is respected by the family physician, and some secondary cause of death appears in the certificate, instead of the primary cause, cancer. Deaths from cancer registration area in the United States for 1907 were 30,514 or 1,494 more than in 1906, and a rate of 73.1 in 1907 compared with 70.8 in 1906. Estimated deaths from cancer in the United States for 1907 were 63,508. For the year 1908, 33,465 deaths from this disease were returned, and the death rate was 74.3 per 100,000 of population, as compared with 30,514 deaths and a death rate of 73.1 for 1907.

A careful study of the whole subject shows the increase to be a general one and not limited to a few parts of the body. In other words intra-abdominal or inaccessible cancer, which would be the type most likely to be affected by improved methods of diagnosis, shows even less relative increase than external cancer. In 1868 the death-rate for cancer of the stomach per 1,000,000 living, 35 years and upward, was 283.65 for males and 193.45 for females. In 1888 the rate had increased to 346.15 for males and 277.79 for females, making an increase of 22 per cent. for males and 44 per cent. for females; but in this particular period the death-rate of cancer in general had increased 50 per cent. The greater death-rate of malignant disease in women is due to the large number of cases which occur in the breast and the uterus. In all other localities the liability in the male is much greater than in the female. Cancer has already increased to such an extent that at the present time it causes more deaths among women than tuberculosis, in 1905 the rate being 100 cancer deaths to 94 from tuberculosis. Even taking men and women together, and at all ages, the death-rate from cancer is rapidly approaching that of tuberculosis. From 1851 to 1860 the death-rate per 1,000,000 living was 317 for cancer, 2,676 for phthisis, and 807 for other tuberculous disease; while from 1891 to 1900 the rate was 754 for cancer, 1,391 for phthisis, and 619 for tuberculous diseases.

A careful analysis of the statistics of cancer that are obtainable at the present time forces one to the conclusion that there is a constant and considerable increase in the number of people afflicted with cancer in all civilized countries.

73. **Ligation for Innominate Aneurism.**—DaCosta reports two cases in which this procedure was carried out. One patient is alive and well two and a half years after operation, the other died from some unknown cause three years after the operation.

76. **New Operation for Prominent Ears.**—The operation described by Luckett is for the purpose of reconstructing the fold or truss of the cartilage recognized as the antihelix in ears turned forward, and the same principle is applicable for the reconstruction of the superior crux of the antihelix for the so-called drooping ears, or of both together when necessary. A crescentic incision is made through the integument opposite to the line of the intended new or reconstructed antihelix. The inscribed integument is removed; the edges of the skin are now dissected free from the cartilage and retracted. A similar crescentic segment is removed from the cartilage. The skin and the cartilage are now sutured separately, and it is the method of suturing the cartilage that is emphasized. The cartilage suture is passed from the cranial side from within out and back again, care being taken not to perforate the skin on the external surface, then crossed over the excised portion and passed on the other side from within out and back again as a Lembert suture, in such a manner that when the suture is

drawn tight and tied, not the edges but the sides or flat surfaces of the cartilage will be in apposition. The edges have been turned forward or outward to form the antihelix and at the same time the helix is set closer to the cranium, thus diminishing the cephaloauricular angle. Four or five interrupted sutures are usually enough for the cartilage. The skin is sutured with horsehair. The greatest care must be exercised in asepsis and in the hemostasis. The width of the crescentic segment of the cartilage to be removed depends on the size of the ear, and the thickness of the cartilage.

79. **Closure of Abdominal Wounds.**—The stitch Norris makes is a quadrilateral one and no matter how tightly it is tied two borders of the quadrangle are unconstricted. A comparatively large area of fascia is brought into apposition and this not only produces firm union but lessens the number of stitches required. As a moderate amount of fascia is taken up with each passage of the needle, and as the stitch is, as it were, a double one, tearing out is extremely unlikely. When the stitch is tied it should form a square each side of which measures about one-fourth of an inch.

Mississippi Medical Monthly, Vicksburg

June

81 Medical Legislation. D. W. Jones, Brookhaven.
82 *Inevitable Abortion. F. J. Underwood, Nettleton.
83 *The Duty of the Family Physician as an Obstetrician. W. L. Little, Wesson.
84 *A Plea for Asepsis in Labor. R. M. Boyd, Houston.
85 *Care of the Expectant Mother. J. W. Cooper, Newton.

82 to 85.—Abstracted in THE JOURNAL, May 7, 1910, pp. 1568, 1569.

American Journal of Surgery, New York

June

86 A Modified Technic for the Combined Operation of Extirpation of the Rectum. J. P. Tuttle, New York.
87 The Treatment of Placenta Prævia, Based on the Study of 42 Cases. A. A. Hussey, Brooklyn.
88 Tuberculosis of the Fallopian Tubes as an Etiologic Factor in Extrauterine Pregnancy. A. M. Taylor, San Francisco.
89 The Removal of Tonsils. N. L. Wilson, Elizabeth, N. J.
90 Surgical Significance of Nystagmus and Vertigo. P. Fridenberg, New York.
91 Perforation in Typhoid Fever. F. E. Dubois, Plainfield, N. J.
92 Gastrocolic Fistula Due to Carcinoma: Operation. W. H. Axtell, Bellingham.

Journal Indiana State Medical Association, Fort Wayne

June

93 The Action of the Heart Valves. W. J. Moenkhaus, Bloomington.
94 Condition of the Heart Muscle and Vascular System in Various Heart Lesions. R. H. Ritter, Indianapolis.
95 Types of Myocardial Lesions. A. C. Kimberlin, Indianapolis.
96 *New Method of Tying Off the Umbilical Cord. C. J. Rothschild, Fort Wayne.
97 Inflammation of the Seminal Vesicles. J. N. Baughman, Evansville.
98 The Value of the Leucocyte Count as Shown by the Analysis of 300 Miscellaneous Counts. B. W. Rhamy, Fort Wayne.
99 Sketches of the Medical History of Indiana (continued). G. W. H. Kemper, Muncie.
100 *New Means for Diagnosis and Treatment of Diseases of the Sigmoid and Rectum. F. W. Foxworthy, Indianapolis.
101 The Relation of Pelvic Inflammation to Stricture of the Rectum. B. Van Sweringen, Fort Wayne.
102 Why Is the Country Doctor? C. C. DuBois, Warsaw.

96. **A New Method of Tying Off Umbilical Cord.**—A strip of pure para rubber 7 cm. long, 3 by 3 mm. in cross section, is drawn through a small aluminium ring 7 mm. in diameter, so that a loop 2 cm. long with two free ends is obtained. The one end has a knot fast against the ring and is 7 mm. long, the other end is about 2 cm. long. This constitutes the entire apparatus used by Rothschild. He takes a loop of cord about 5 cm. distal to the umbilicus, places the rubber ligature over it, draws slightly on the end, cuts through the loop, draws the placental end of the cord out, and ties it off as usual. The umbilical end of the cord then has the ligature over it. The ligature is adjusted so that 1½ cm. is on either side of it, then it is drawn tight and remains until the cord "drops off." He has tried it on about 100 cases and with good results. There was no after-bleeding and the cord dropped off normally. It is easy of application, the force exerted is continuous, bleeding cannot take place (it is especially valuable in hemophilia), and costs only a few cents.

100. **Diagnosis of Diseases of Sigmoid and Rectum.**—Foxworthy describes a specially devised table which he uses for this work. It can be thrown into positions which make possible the proper examination and treatment of these special diseases.

Military Surgeon, Washington, D. C.

June

103 Personal Experience During the Spanish-American War, Showing the Disadvantages of Depending on Untrained Civilian Physicians for Military Service in Time of War; with Some Suggestions. C. B. G. de Nancrede, U. S. Army.
104 Field Service Hygiene. R. Smart, Roswell, New Mex.
105 Hookworm Disease and Pellagra. H. J. Nichols, U. S. Army.
106 A Visit to India. H. C. Pillsbury, U. S. Army.
107 Intestinal Parasites in Scout Companies. W. R. Eastman, U. S. Army.
108 The Gastrodiscus Hominis in the Philippines: Introductory Helminthologic Comment. A. D. Tuttle, U. S. Army.

Buffalo Medical Journal

June

109 A Present Menace to Education. P. W. Van Peyma, Buffalo.
110 Toxins and the Liver. W. M. Brown, Rochester, N. Y.
111 Treatment of Spreading of Diffuse Peritonitis. F. W. McGuire, Buffalo.
112 The Vagaries of Fibromyomatous Tumors. J. F. W. Ross, Toronto.

Journal of Nervous and Mental Diseases, Lancaster, Pa.

June

113 Cerebral Localization from the Point of View of Function and Symptoms. M. Prince, Boston.
114* The Sensory Function Attributed to the Seventh Nerve. C. K. Mills, Philadelphia.

114. **Sensory Functions of Seventh Nerve.**—Mills summarizes his paper as follows: 1. If by the seventh nerve is meant that nerve trunk which arises in the pons from the lower and upper facial nuclei, this nerve is purely motor. 2. It is doubtful whether nerves whose functions are concerned with the pressure and postural senses are conveyed in the branches and trunk of the motor facial. 3. The afferent systems for epicritic and protopathic sensibility are not represented in the seventh nerve. 4. The geniculate ganglion is the homologue of the dorsal spinal ganglia. 5. If the geniculate ganglion, the intermediary nerve of Wrisberg, and the chorda tympani are considered part of the facial or seventh nerve, then this nerve may be regarded as partly sensory, having functions chiefly gustatory. 6. Nerve fibers concerned with the transmission of gustatory impulses proceed from their origin in the geniculate ganglion to their distribution by way of the great superficial petrosal nerve and the chorda tympani. The destination of the former nerve is the soft palate, where its fibers terminate in taste buds, and of the latter nerve the taste buds in the anterior two-thirds of the tongue with the exception of its tip. 7. Evidence is lacking that in the facial trunk proper, in the intermediary nerve of Wrisberg, the great superficial petrosal or the chorda tympani, are nerves of common sensibility, although some observations would seem to indicate that the anterior part of the tongue and possibly a very small strip of the auricle have a vestigial supply of this sort. 8. Herpes does not originate from inflammation of nerves which are not concerned with cutaneous or membranous sensibility. 9. Limited inflammation of the geniculate ganglion may in rare cases occur, producing a syndrome whose factors are loss or perversion of taste and vasodilator and secretory phenomena. 10. If the geniculate ganglion is the seat of inflammation, adjoining parts such as the facial nerve proper, and the eighth nerve may be involved by pressure or extension, thus giving rise to peripheral facial paralysis and to acoustic phenomena and phenomena of equilibration and of orientation, vasodilator and secretory symptoms, or to some of these symptoms. 11. The cases of herpetic inflammation—cervico-occipital, auricular and facial—which have been observed in connection with facial paralysis, or facial paralysis and acoustic symptoms, are best explained on the supposition of an involvement of ganglia other than the geniculate.

Maryland Medical Journal, Baltimore

June

115 Professional Significance of the Midwife and Optometry Bills Passed by the Recent Legislature of Maryland. H. Woods, Baltimore.
116 Care and Treatment of Epileptic Insane. J. C. Clark, Baltimore.
117 Climatic, Soil and General Conditions in Maryland with Reference to Hookworm Disease. M. L. Price, Baltimore.
118 Differential Leucocyte Count as a Diagnostic Aid. S. Cherry, Baltimore.
119 Genealogic Trees of Epileptic Families. E. A. Kennedy, A. V. Cooper and F. W. Gould, Baltimore.

Interstate Medical Journal, St. Louis

June

120 The Medical Profession in Relation to Preventive Medicine. L. Flick, Philadelphia.
121 The Cancer Problem. L. Loeb, Philadelphia.
122 Cases Simulating Abscess of the Liver. G. Dock, New Orleans.
123 Etiology and Diagnosis of Chronic Myocarditis. R. H. Babcock, Chicago.
124 Treatment of Chronic Myocarditis. A. R. Elliott, Chicago.
125 Vaccination of Infants and Young Children. J. R. Snyder, Birmingham, Ala.
126 The Cause and Cure of Inguinal Hernia. H. O. Marcy, Boston.
127 Fulguration and Its Results Compared with Those of Other Methods of Cancer Therapy. Dr. de Keating-Hart, Paris, France.
128 A Useful Mild Caustic: Its Employment in Cancer and Affections of the Cornea. A. E. Ewing, St. Louis.

Journal of Biological Chemistry, Baltimore

June

129 *A New Method for the Determination of Fat and Fatty Acids in Feces. O. Folin and A. H. Wentworth, Boston.
130 Carbohydrate Esters of the Higher Fatty Acids. W. R. Bloor, Boston.
131 The Production of Volatile Fatty Acids and Esters in Cheddar Cheese and Their Relation to the Development of Flavor. S. K. Suzuki, E. G. Hastings and E. B. Hart, Madison, Wis.
132 Method for the Determination of Sodium Iodid in Animal Tissues. P. J. Hanzlik, Cleveland, Ohio.
133 *Alkaptonuria. A. Ravold and W. H. Warren, St. Louis, Mo.
134 Phosphorus in Beef Animals. C. K. Francis and P. F. Trowbridge, Columbia, Mo.
135 New Form of Extraction Apparatus. C. W. Greene.

129. **Determination of Fat and Fatty Acids.**—Folin and Wentworth determine the fatty acids after extraction by ethereal hydrochloric acid solution, purification of this extract by solution in petroleum ether, and dissolving the residue left after evaporation of ether in benzol, by titration with sodium alcholate, using phenolphthalein as an indicator.

133. **Alkaptonuria.**—Ravold and Warren had the opportunity of examining the urine in a case of alkaptonuria. The fresh urine was clear, from pale yellow to reddish brown, darkening on standing, with no unusual odor. The volume varied from 930 c.c. to 1,425 c.c., averaging, 1,050; the specific gravity varied from 1.009 to 1.016, averaging 1.013. The polariscope showed that it contained no sugar. It was always acid and the fermentation test was negative. It reduced copper solutions only on heating. On contact a black ring appeared but no precipitate, and on mixing the liquids the blue color of the reagent disappeared, the mixture becoming green and beginning to darken from the surface down. It reduced ammoniacal silver solution immediately in the cold, giving a silver mirror on the test tube. It did not reduce alkaline bismuth solutions and gave a negative reaction with the phenylhydrazin test. The uric acid was below the average and the amount of urea seemed to be diminished. The homogentisic acid nitrogen quotient averaged 49.9 which corresponds with that found in other samples of urine containing this substance.

St. Paul Medical Journal

June

136 Transverse Abdominal Incisions. E. Boeckmann, St. Paul.
137 Surgical Pathology of the Thyroid. T. F. Riggs, Pierre, S. D.
138 Chlorosis, the Underlying Cause of Symptoms Often Mistaken for Other Conditions. J. L. Rothrock, St. Paul.

Louisville Monthly Journal of Medicine and Surgery

June

139 Splanchnoptosis. C. C. Lucas, Louisville.
140 Different Terminations of Foreign Bodies in the Windpipe. G. H. Chapman, Uniontown, Ky.

Southern California Practitioner, Los Angeles

June

141 The Old Doctor—The Young Doctor—The Ideal Doctor. J. W. Shiels, San Francisco.
142 Osteopathy by an Osteopath. D. L. Tasker, Los Angeles.
143 Prevention of Measles. L. M. Powers, Los Angeles.
144 Ocular Injuries, with Special Reference to Sympathetic Ophthalmia. B. F. Church, Redlands, Cal.
145 Is Tonsillotomy a Proper Operation? W. H. Roberts, Pasadena.
146 *A Simple Differential Stain for Diphtheria Bacilli. D. C. Ragland, Los Angeles.

146. **Differential Stain for Diphtheria Bacilli.**—Ragland has devised the following stain intended specially for the "small town" physician who has a microscope but no incubator. The stain is made up of methylene blue and eosin and the adult diphtheria bacillus is quickly recognized because the polar granules are stained a deep blue, while the remaining portion of the bacillus takes the eosin or pink stain, making thereby a decided contrast. The stain is composed of three solutions, the formula and technic for using which are as follows: Solution "A": Methylene blue, saturated aqueous solution, 10 parts; 10 per cent. citric acid solution, 10 parts; aqua destillata, 80 parts. Solution "B": 10 per cent. aqueous solution citric acid, 5 parts; methyl alcohol, 22 parts; distilled water, 73 parts. Solution "C": Eosin, saturated aqueous solution, 1 part; aqua destillata, 199 parts.

The technic is as follows: 1. Make thin smears from throat, especially from the margin of membrane or suspicious path. 2. Dry in air. 3. Fix in flame (gas or alcohol). 4. Add sufficient blue stain "A" to cover smear and allow to act 10 to 15 seconds; then shake it off but do not wash. Now apply solution "B" and allow to act for 10 to 15 seconds, then shake it off, but do not wash. Lastly add solution "C" and allow it to act for 10 to 15 seconds; then shake off excess of stain and blot dry with filter or blotting paper, mount in Canada balsam or cedar oil and examine. Diphtheria bacilli show as pink rods with a dark blue granule in either pole. All other bacilli and cocci are stained pink. This stain has been controlled by the culture method of laboratory diagnosis in over 1,000 cases.

Denver Medical Times and Utah Medical Journal

June

147 Bezold's Mastoiditis. F. E. Waxham, Denver.
148 Acute Traumatic Tetanus Treated by Magnesium Sulphate. A. P. Heineck, Chicago.
149 Tetanus, with Infection of Attending Physician. E. L. Freiberger, Alamosa, Colo.
150 Differential Diagnosis of Intestinal Obstruction. H. P. Kirtley, Salt Lake City.

Bulletin Medical and Chirurgical Faculty of Maryland, Baltimore

June

151 *Some Public Health Problems. G. M. Linthicum, Baltimore.

151. Published in full in THE JOURNAL, June 4, 1910, p. 1835.

Archives of Pediatrics, New York

June

152 *The Results of Substitute Feeding in Premature Infants. M. Ladd, Boston.
153* Acidified Milk in Pediatric Practice. J. M. Brady, St. Louis.
154 Congenital Obliteration of the Bile Ducts. E. L. Peck, Philadelphia.
155 Stuttering. E. W. Scripture, New York.
156 Casein Curds in Infants' Stools: Biologic Proofs of Their Casein Origin. F. B. Talbot, Boston.
157 *Clean Milk. G. W. Goler, Rochester, N. Y.
158 Bovine Tuberculosis. W. H. Park, New York.
159 Abscess of Liver in an Eight-year-old Boy: Operation. J. R. Judd, Honolulu, H. I.

152. **Substitute Feeding in Premature Infants.**—Ladd studied these cases in two hospitals. In one hospital there were included in this series 95 babies of whom 58, or 61 per cent., died; 24, or 25.3 per cent., lived and gained in weight; 13, or 13.7 per cent., lived but were discharged, either losing in weight or making no gain. Of the last mentioned group many were taken home because of their condition, and probably died, so that the ultimate mortality was undoubtedly considerably more than 61 per cent. In the other hospital there were 30 babies included in the series. Of these, 24 died, giving a mortality of 80 per cent., and 6 lived and gained in weight, a percentage of 20. The mortality was therefore nearly 20 per cent. greater at the Children's Hospital than at the Infants' Hospital. This difference is probably accounted for by the fact that no infant was discharged while losing in weight and condition. All were allowed to remain in the wards until their condition warranted treatment at home.

The total mortality was 65.6 per cent. in 118 out of 125 babies weighing under 2,100 grams at birth. No infant weighing under 1,200 at birth survived. No infant in the sixth month of gestation survived. The smallest baby admitted weighed 570 grams and lived six days. The possibility of materially lowering the mortality by providing proper means of conveying premature infants to the hospital is very great. Premature babies who survived gained on an average only 50 grams a week on modified milk, for an average period of 70 days each. The average energy quotient of the food of 11 patients who lived and gained in weight was 107. There was no definite relation between the energy quotient of the food and the weekly gain in weight. Modified milk, however, carefully administered and supervised, must be considered an unsatisfactory food for premature infants, and should be used only when breast milk cannot be obtained. Ladd says that

hospitals planning to receive premature infants should make ample provision for the maintenance of wet nurses. The relative value of padded cribs and incubators could not be accurately judged, as modern incubators have not been used at either of the two hospitals in which this study was made.

153. **Acidified Milk in Pediatric Practice.**—Brady believes from his experience that acidified milk fills a long felt want in the institution feeding of infants. Pure air, however, is indispensable, and the larger the ward and the fewer babies in that ward the greater the success with any method of feeding. Young infants at birth may with advantage be placed on this food. Thrush and other forms of stomatitis are seldom met with in infants receiving this food. The development of scurvy and rickets need never be feared. Acidified milk places at the disposal of the infant the casein in the form of the lactate, which is so necessary for the growth and development of the infant in an assimilable form and in a sufficient quantity. The lactic acid bacillus and the lactic acid certainly seem to prevent the development of intestinal indigestion, as the babies on this food almost invariably have good stools. It seems that the infant, when receiving acidified milk mixtures is in a better position to care for the fats, and that a larger percentage of fat may be fed than when on the usual modified milk mixtures. The casein in acidified milk being in the form of the lactate is not affected by the rennin. Brady emphasizes the rarity of curds in the stools of infants receiving acidified milk mixtures even when top milk mixtures are employed, but he does not advise the use of these high fat percentages in the early weeks, as fat diarrhea and fat intoxication must be reckoned with. From his observations it would seem that fat alone, and protein alone, are not responsible for the curds in the stools of infants fed on cows' milk; for their production it would seem that the fats require the presence of the proteins and that with both acting together the result is the very familiar curdy, mucous stool; the latter due to a secondary catarrh from the irritation of the former. This reasoning seems close at hand when it is considered what occurs in acidified milk feeding. The proteins are in the form of very fine particles, especially if the acidified milk has been well agitated, not coagulable by rennin; therefore, its deleterious influence on the fats is removed, and hence the normal stools. In order to be successful in feeding acidified milk, it is necessary to be well grounded in the principles of infant feeding, and this method does not furnish a short route to this goal. The good results seem due not alone to the low fat, to the presence of lactic acid and to the chemical change of the protein, but the presence of the lactic acid bacillus plays a very definite rôle.

In private practice cases of malnutrition, intestinal indigestion and diarrhea should have this food. Finally, Brady would make a special plea that the city infant during the days of excessive heat, the latter part of July and August especially, receive the advantage of this food.

157. **Clean Milk.**—In the 13 years, from 1884 to 1897, inclusive, during which no systematic milk work was done in Rochester, the total number of deaths under one year of age was 6,306, and the deaths between one and five years of age, 3,304, making a total of deaths from birth to five years of age, 9,610. For the 13 year period, from 1897 to 1909, inclusive, the total deaths under one year of age were 4,641, and the deaths from one to five years of age 2,080, making a total of 6,721. In the first period not all of the deaths were reported; in the last period we have reported the death of every child born at term who breathed. The mortality between birth and five years of age showed a diminution of 30 per cent. in the last period. This, Goler shows, is what can be done when the baby gets clean milk.

Quarterly Bulletin Northwestern University Medical School, Chicago

June

160 The Changes Produced in the Kidneys by Experimental Ligation of the Ureter. G. D. Scott, Chicago.
161 Polydactylism Correlated with Defect of the Fronto-nasal Process. C. W. Prentiss, Chicago.
162 The Topography of the Hypophysis. W. S. Gibson, Chicago.
163 The Repair of Injuries to Peripheral Nerves. J. B. Murphy and A. B. Eustace, Chicago.
164 Traumatic Asphyxia with Report of Cases. F. E. Pierce, Chicago.
165 The Treatment of Syphilis. F. E. Simpson, Chicago.
166 Splenectomy in Relation to Union in Fractures. A. B. Kanavel, Chicago.

Albany Medical Annals

June

167 The Pathology of Tuberculosis of the Breast. C. G. Cumston, Boston.
168 Local Anesthesia. A. H. Traver, Albany.
169 The Clinical Significance of Subfebrile Temperature in Pulmonary Tuberculosis. A. T. Laird, Albany.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

Lancet, London

June 18

1 Foreign Bodies in the Air Passages. R. J. Godlee.
2 The Precipitin Test in Medicolegal Work. F. J. McWeeney.
3 Conjunctivitis. R. W. Doyne.
4 Influenza Meningitis. F. E. Batten.
5 A Comparison Made Between Simple Gastro-Circulatory Seizure and Angina Pectoris Attack. W. Verdon.
6 Four Cases of Sporadic Cretinism in One Family. B. C. Stevens.
7 *The Treatment of the Partially Drowned. J. A. Barnes.

7. **Treatment of the Partially Drowned.**—The result to be aimed at in the treatment of such persons, says Barnes, is the driving of the blood from the abdomen, so that the brain may receive its proper supply. This he aims at by an attempt at auto-transfusion as follows: Having started an assistant on artificial respiration, he firmly bandages the legs from the feet upward. A roller towel is then passed around the patient's abdomen, the two ends crossing in front. One assistant is told off to each of these ends. As the arms are brought down to the chest in the expiratory movement of artificial respiration (Silvester's method) these two assistants grasping the towel-ends firmly with their right hands, pull them, at the same time making pressure on the abdomen with their left hands. In this way considerable squeezing of the abdomen is obtained. As the inspiratory movement commences the pressure is relaxed so as not to interfere with the expansion of the lungs. The process is continued synchronously with the movements of artificial respiration. Barnes' idea is that this acts beneficially in two ways: (1) it assists, by pressing up the diaphragm, to more completely empty the chest with expiration; and (2) it squeezes some of the excess of blood from the abdominal cavity. The bandaging of the legs and arrangement of the towel can be very quickly carried out with assistance, of which there is usually no lack in these cases.

Gravity should also be made to assist the flow of blood to the brain by keeping the head at a lower level than the body. He gives a hypodermic injection of ether (30 minims) and usually one of strychnin as well. The objection to the use of these stimulants—that they stimulate an already tired center and are quickly followed by increasing depression—seems hardly to apply in cases of drowning, as when once reaction has set in recovery is usually rapid.

British Medical Journal, London

June 18

8 Faith Healing. C. Allbutt.
9 "Suggestion" in the Treatment of Disease. H. Morris.
10 Spiritual Healing. H. T. Butlin.
11 The Faith that Heals. W. Osler.
12 Considerations on the Occult. T. C. Shaw.
13 Palaeogenic Face-Pattern in Acroteric Piebalds. J. Hutchinson.
14 Dermatitis Artefacta. N. Walker.

Medical Press and Circular, London

May 25

15 Disseminated Sclerosis. J. Taylor.
16 The Roentgen Treatment of the Superficial Cutaneous Catarrhs. G. J. Myller.
17 Acute Leukemia. T. G. Moorhead.
18 A Suggested Memorial to King Edward, the Peacemaker. D. Walsh.

June 1

19 The Change of Life in Man. M. de Fleury.
20 Coxa Valga. S. Pringle.
21 Ununited Fracture of the Tibia Treated by Wiring. W. C. Stevenson.
22 A Convenient Instrument for Ready Clinical Investigation of the Sensibility to Coolness and Warmth. T. A. Williams.

June 8

23 The Problems Presented by Extreme Cases of Incontinence of Urine and Some Solutions of Them. W. Alexander.
24 *Cesarean Section in the Treatment of Eclampsia Gravidarum. F. J. McGann.
25 Nux Vomica. G. C. Crichton.
26 Adiposis Dolorosa. J. C. McWalter.

24. **Cesarean Section in Treatment of Eclampsia Gravidarum.**—McCann performed Cesarean section successfully in the case of a woman who was seen shortly after her first convulsion. McCann suggests the following indications for this operation: (1) When the fits are severe and recur in rapid succession; (2) when labor has not commenced; (3) when the cervix is difficult to dilate from elongation, hypertrophy or excessive rigidity; (4) when the mother is moribund and the fetus living and viable; (5) when labor has commenced and there is found considerable disproportion between the size of the child and that of the pelvis; (6) when the surroundings of the patient are suitable for a major surgical operation and when the services of an operator skilled in pelvic surgery can be obtained.

Clinical Journal, London

May 25

27 The Heart. S. West.

June 1

28 *Three Rare Tumors of the Base of the Tongue: Surgery of Malignant Diseases of the Tongue. F. Eve.
29 The Heart (continued). S. West.
30 So-called Second Sight—Its Features, Varieties and Causes. P. Dunn.

June 8

31 Hemiplegia and its Treatment. G. Holmes.
32 The Heart (concluded). S. West.
33 The Hyperemic Treatment of Inflammation. A. V. Poyser.

28. **Tumors of the Tongue.**—The two cases of endothelioma of the tongue reported by Eve presented many features in common. In each the growth occupied the extreme base of the tongue and formed a very prominent disk-shaped mass which was not ulcerated on the surface. Glands were distinctly enlarged in the superior carotid triangle in both. The symptoms had been discomfort or a feeling of a foreign body in the fauces, and were so slight that the growth attained a considerable size before it was discovered. The microscopic character of the tumor in the first case was of a lymph-endotheliomatous type, the growths consisting of cord-like masses of endothelial cells, in places surrounding dilated lymphatic channels. In the second case it was peritheliomatous. There were very numerous and large vascular channels surrounded by cords of endothelial cells. The third case was one of epithelioma.

Australasian Medical Gazette, Sydney

April

34 Surgical Work of the Year. H. C. Hinder.
35 The Evolution of the Treatment and Care of the Insane. S. H. R. Montgomery.
36 Bilateral Tubal Pregnancy with Rupture on Either Side. T. G. Wilson.
37 *Strangulated Hernia in an Infant 16 days Old. E. E. Moule.
38 Poisoning by Sulphate of Zinc. A. Palmer.

37. **Strangulated Hernia in an Infant.**—Sixteen days after birth, the baby was suddenly seized with an attack of vomiting and seemed very ill. Then it got a little better and passed some urine and feces. An hour later Moule found a lump in the upper part of the right scrotum; neither nurse nor mother had noticed it. The lump gurgled on pressure, but was irreducible even under chloroform. The sac when opened proved to be a patent funicular process containing about four inches of purplish gut.

British Journal of Children's Diseases, London

May

39 Symmetrical Trophic Lesions of the Extremities in a Child: Syringomyelia (Morvan's Type). H. M. Fletcher.
40 Chronic Polyarthritis with Enlargement of the Lymphatic Glands (Still's Disease). R. B. Ness.
41 The Infant Out-patient from a Public Health Standpoint. E. H. R. Harries.

June

42 Acute Nonsuppurative Encephalitis in Children. N. P. Marsh.
43 *Polioencephalitis of the Cerebello-Rubrospinal System—A Cause of "Acute Tremor" in Children. L. Parsons.
44 *A Model Crèche. B. Myers.

43. **Polioencephalitis.**—While polioencephalitis will not account for all forms of acute tremor, for it has been seen associated with a tuberculous tumor, Parsons holds that a diagnosis of polioencephalitis can usually be made by a consideration of the type and age of the child, the season of the year, character of the onset, and the course of the disease, the absence of changes in the fundi oculorum and cerebrospinal fluid, and in those cases where it does occur, the presence of an associated poliomyelitis.

44. **A Modern Crèche.**—The ideal, or modern crèche, Myers says, should be so arranged (a) that the day nurseries, bathrooms, etc., for the children's use ought to be on the ground floor; (b) that the kitchen scullery, larder, pantry, mother's dining-room, and a laundry-room should be situated in the basement; and (c) that the matron's and nurses' bedrooms, sitting room, students' room, cloak-room, etc., could be conveniently placed on the first floor.

Journal of Tropical Medicine and Hygiene, London

May 16

45 Operations for Elephantiasis. T. E. R. Branch.
46 *Necatur Americanus* in the Bahr-Elghazel Province of the Anglo-Egyptian Sudan. J. B. Christopherson.

Journal of Obstetrics and Gynecology of the British Empire, London

June

47 *After-results of Abdominal Operations on the Pelvic Organs: 1,000 Consecutive Cases. A. E. Giles.
48 The Prevention of Ophthalmia Neonatorum with Special Reference to the Teaching of Midwives. A. N. Walker.
49 *The Hemolytic Lipoids of Degenerating Fibroids with Special Reference to Red Degeneration. H. L. Murray.
50 Subphrenic Abscess Complicating Pregnancy with Sloughing of Spleen. B. A. J. Solomons.

47. **After-Results in Abdominal Operations.**—A review of the final results in 248 cases has convinced Giles that the effect of hysteropexy on the general health is very good, as 90 per cent. of the patients were better than before the operation, as many as 75 per cent. being in quite good health; while among the 10 per cent. who were not better the cause had nothing to do with the operation in one-half of them. Symptoms are markedly relieved; 90 per cent. of the patients had either no pain afterward or had less pain than before the operation; 14 patients were relieved of dysmenorrhea, 21 of dyspareunia, and 16 of headaches; 22 patients got relief from menorrhagia, and 13 from excessive leucorrhea; 13 patients found their constipation improved. As regards the effect of hysteropexy on the bladder, 18 per cent. of patients experienced frequency of micturition, and 77 per cent. had no trouble, or no more than before operation. The position of the uterus remains permanently good in about 95 per cent. of cases; about 5 per cent. suffer from partial or complete return of displacement. The results in cases of procidentia are not quite as good as in cases of retroversion or prolapse; but 88 per cent. of cases of procidentia show permanent good results. To obtain the best results in the latter cases combined operations are usually necessary. In the event of pregnancy following hysteropexy, there is a slightly increased tendency to miscarriage if pregnancy follows too soon after the operation; hysteropexy causes no subsequent complications of labor, as out of 44 cases of full-time delivery 40 had normal confinements, and the remaining 4 had complications independent of the operation. When pregnancy follows hysteropexy, the position of the uterus is not disturbed thereby, as the results after pregnancy were just as good as in cases where no pregnancy followed, and the cases of full-time delivery showed only one case of partial return of displacement out of 29 cases. Among these cases, therefore, the uterus kept in good position in 96.6 per cent. of the cases, as against 94.7 per cent. in the cases of patients who did not become pregnant.

49. **Red Degeneration of Fibroids.**—Murray examined four specimens of red degeneration of uterine fibroids and found that the lipoids of degenerating fibroids are markedly hemolytic. This hemolytic action is readily restrained by blood plasma. Excess of lipoid in a suspension of red blood corpuscles leads to the development of a gray or brown color in place of the red. Thrombosis in red degeneration is not primary. Red degeneration microscopically is indentical with

certain other degenerating fibroids showing no red. The accumulation of lipoid is not, in the first instance, dependent on the presence or amount of thrombosis, but on the degree of preceding degeneration. Laking of the corpuscles has more relation to lack of the fluid constituents of the blood than to large excess of lipoid. Many of the stains in fibroids—not necessarily red stains—may be due to old symptomless hemolysis.

Archives de Médecine des Enfants, Paris

June, XIII, No. 6, pp. 401-480

51 *Chronic Appendicitis in Children. J. Comby.
52 Vital Staining with Neutral Red for Study of the Pathologic Cerebrospinal Fluid. E. Weill and A. Policard.

51. **Chronic Appendicitis in Children.**—Comby reviews 31 operative cases and 108 others in which chronic appendicitis was diagnosed, and discusses the differential signs. The condition is more common than generally recognized, he says; many cases of assumed dyspepsia, anemia, chlorosis, liver affections, enterocolitis, the status lymphaticus and tuberculosis are in reality solely or mainly the effect of chronic appendicitis. Acute appendicitis is generally merely the flaring up of a chronic process, and physicians should be on the lookout for this. Periodical vomiting is a sign that the child is a candidate for acute appendicitis, as also a tendency to repeated indigestion. Constipation is habitual and obstinate although diarrhea may be observed; some of the children fail to develop properly but after removal of the appendix grow promptly to normal stature. There is also, he says, a nervous form of chronic appendicitis. Children with it are moody, disinclined to play or work, and seek solitude. A change of character in this line, and discovery of digestive disturbances should suggest chronic appendicitis. Intercostal neuralgia may also be a sign, or pain in the right leg, with a tendency to limp, suggesting hip or knee disease; Comby has had several cases of this kind. In another group the suggestive symptom was a tendency to faint, the children growing pale and falling in syncope but retaining consciousness throughout. Headache, convulsions, urticaria and prurigo were observed in other cases. The proof in regard to the causal appendicitis in these cases is afforded by the rapid restoration to normal after appendicectomy. A spontaneous cure of chronic appendicitis cannot be counted on, although there may be symptomless intervals, sometimes of years. Surgical treatment is required in the majority of cases, especially for chronic appendicitis in children. The dangers of an interval operation are so slight as to be negligible, but the diagnosis must be positive. In case of doubt he prefers to operate and has never yet had occasion to regret his decision.

Bulletin de l'Académie de Médecine, Paris

June 7, LXXIV, No. 22, pp. 497-587

53 *Inflammation and Thickening of the Pleura with Persistent Effusion. (Les pachypleurites et les pleurésies intarissables.) M. Dieulafoy.
54 *Vomiting of Pregnancy. (Des vomissements de la gestation.) A. Pinard.
55 *Inflammatory Tuberculosis of the Uterus and Adnexa. A. Poncet and R. Leriche.

Presse Médicale, Paris

June 8, XVIII, No. 46, pp. 425-432

56 *Inflammation and Thickening of the Pleura with Persistent Effusion. (Les pachypleurites et les pleurésies intarissables.) M. Dieulafoy.

June 11, No. 47, pp. 433-440

57 Sudden Variations in the Number of Leucocytes Depending on the Arterial Pressure. J. Camus and P. Pagniez.

53-56. **Pleurisy with Persistent Effusion.**—Dieulafoy reports two cases of thickening of the pleura with recurring effusion for ten years in one case and for twenty years in the other. The patients were tapped over a hundred times and a total of over 230 liters was withdrawn but the general health persisted constantly excellent; the patients were incommoded merely by the mechanical disturbance from the effusion. In the first case the effusion was purulent and fetid and streptococci and pneumobacilli could be cultivated from it, but they were of such attenuated virulence that they proved harmless for animals. In the other case the effusion was constantly sterile. The effusion in both cases has finally ceased, the patients not having required tapping for a long time. Dieulafoy theoretically advocates decortication of the lung in such cases, but there was nothing to indicate that active intervention was necessary in these or in a third case in which the patient was tapped 15 times in the course of six years; there has been no return of the effusion since 1885 in this last case.

54. **Vomiting of Pregnancy.**—Pinard gives a historical review of this subject and states that years of experience have confirmed him more and more in the conviction that intoxication is responsible for the tendency of pregnant women to vomit, and that the outcome depends on the intensity of the intoxication. He reiterates his assertion that the pulse is the best index of the degree of intoxication, and that if it goes above 100 the pregnancy should be interrupted at once. The details of 7 recent cases are added to supplement the 20 he has previously published (reviewed in THE JOURNAL, Oct. 30, 1909, page 1518).

55. **Inflammatory Tuberculosis of Internal Genitals.**—Poncet and Leriche regard a latent tuberculosis as responsible in many cases for sclerosis of the ovaries or toxic impregnation of the Graafian follicles entailing infantilism, hypoplasia of the genitals, amenorrhea, dysmenorrhea, pelvic neuralgia or a tendency to abortions. An old chronic latent tuberculous process may likewise explain the heavy, easily bleeding, painful uterus in women of the alleged neuroarthritic type. All require general antituberculosis measures and possibly tuberculin.

Revue de Chirurgie, Paris

June, XXX, No. 6, pp. 967-1174

58 *Disadvantages of Scopolamin for General Anesthesia. (Chloroforme. Chloral. Scopolamine.) P. Delbet and R. Dupont.
59 Later Results of Transplantation of Veins on Arteries. A. Carrel.
60 Fifteen Cases of Malignant Tumors of the Orbit. A. Faix.
61 Tumors of the Jaws of Dental Origin. (Enclavomes dentaires.) R. Leriche and G. Cotte.
62 Rôle and Mechanism of Infectious Disturbances from a Wisdom Tooth. (Accidents de dent de sagesse.) C. Capdepont.

58. **Disadvantages of Scopolamin for General Anesthesia.**—Delbet and Dupont review their experiences with 120 patients given a dose of scopolamin as a preliminary to chloroform. The list includes 2 fatalities, one serious postoperative syncope and a number of other mishaps. They refer also to Flateau's one fatality in 30 cases, Ziffler's 3 in 64 cases and Blos' several serious mishaps and one death in 105 cases. They declare that the advantages ascribed to the use of scopolamin for this purpose are more apparent than real; it may retard vomiting but does not do away with it altogether. Scopolamin, they add, is unquestionably toxic for patients whose emunctories are out of order, even in a dose as small as 0.001 gm. (1/64 grain). They express a decided preference for chloral as a preliminary to chloroform, as it is not dangerous and in the dose of 4 gm. (61 grains) tranquillizes the patient and prevents the phase of agitation under chloroform. They have used it thus in 850 cases, giving the chloral in water about half an hour before the operation. In the 22 cases on record of fatalities following an injection of scopolamin as a preliminary to general anesthesia, 13 were cancer patients. This proportion warns especially against giving scopolamin to patients with cancer. In 4 other cases the surgical affection was in the neck. In one of the other cases an unusually large dose of scopolamin had been given (0.0036 gm. scopolamin and 0.06 gm. morphin).

Semaine Médicale, Paris

June 8, XXX, No. 23, pp. 265-276

63 *Subacute Typhoid Septicemia. V. Audibert.

June 15, No. 24, pp. 277-288

64 *Dilatation of the Stomach Owing to a Lesion in the Peritoneum or Stomach Wall. J. Paviot.

63. **Subacute Typhoid Septicemia.**—Audibert declares that sufficient attention has not been paid to subacute septicemia from the typhoid bacillus, and yet it is extremely common. The reaction to the presence of the bacillus in the blood may vary with every individual attacked. He protests against restricting the idea of typhoid toxi-infection to the syndrome involving the intestine; it may attack any organ

or tissue and the syndrome has probably many times been diagnosed as influenza, atypical typhoid, gastric fever, etc. This subacute "Eberthian septicemia" has a slow onset; there is no uniform type of fever but it may long continue, with gastric disturbances; the mind is not affected and the patient feels calm and wants to eat. He thinks that this form of typhoid infection occurs more commonly in children than the typical form.

64. **Dilatation of the Stomach from Lesions in the Wall or Peritoneum.**—Paviot has examined with the microscope the stomach from certain cases of dilatation during life and found invariably some lesion in the wall or peritoneum, evidently responsible for the dilatation—of course this material excludes all cases of stenosis of the pylorus. The lesion may long have healed, but it leaves the stomach wall more or less insufficient for its task, owing to sclerosis in the region adjoining the lesion. Careful inquiry will generally elicit a history of some inflammatory process in the region, possibly years before. Once convinced that these dilated stomachs, painful at times or with recurring pains, are of inflammatory nature, wonderful benefit may be derived from energetic revulsion or similar therapeutic procedures, entirely aside from dietetic measures. It may even be advanced as a principle that the more the dilatation of the stomach seems to coincide with painful points in the region below the liver or in the right flank, the better the prospects of a cure under heat and revulsion applied perseveringly to the painful zones. Local revulsion may also prove useful with other gastric disturbances, as for instance for a hard drinker with ulcerative gastritis or a patient with hematemesis and the epigastrium more or less tender; the benefit derived in some of these cases from heat or blisters is another argument in favor of the inflammatory origin of dilatation of the stomach in some cases, whether secondary to inflammation in the peritoneum or to gastric ulcer.

Archiv für Verdauungs-Krankheiten, Berlin

June, XVI, No. 3, pp. 267-418

65 *Salt Content of Common Articles of Food. (Der Chlor- bezw. Chlornatriumgehalt der gebräuchlichsten menschlichen Nahrungs- und Genussmittel.) J. Leva.
66 Case of Abnormally Small Stomach. (Fall von Mikrogastrie.) H. Eppinger and G. Schwarz.
67 Influence of Chologen on Secretion of Bile. (Experimentelle Studien über die Beeinflussung der Gallensekretion durch neuere Cholagoga.) F. Eichler and B. Latz.
68 Influence of Lactic Acid Bacilli on Intestinal Flora. (Einfluss der Milchsäure-Bazillen auf die Darmflora.) M. Einhorn and E. Wood (New York), and E. Züblin (Pittsburg).
69 *The Bead Test and the Test Diet. (Eine vergleichende Studie über die Perlenprobe von Max Einhorn und die Probekost für Darmkranke von Adolf Schmidt.) J G. Wells.
70 *Nervous Dyspepsia. A. Bofinger.
71 Influence of the Salicylates, Mercury and Certain other Drugs on the Diastase Content of the Saliva. (Zur Kenntnis der diastatischen Wirkung des menschlichen Mundspeichels.) (Einfluss einiger Medikamente auf die Speicheldiastase.) E. Fricker. Commenced in No. 2.

65. **Salt Content of Common Articles of Food.**—Leva's research in this line was mentioned with some of his conclusions in THE JOURNAL, July 2, page 93. His tables fill over 15 pages, presenting the results of over 360 analyses and comparing them with those of others. The work has been done to supply a basis for a systematic salt-poor or salt-free diet but he does not here discuss the indications for either.

69. Summarized in THE JOURNAL, April 23, 1910, page 1405.

70. **Nervous Dyspepsia.**—Bofinger reviews the various conflicting views on this subject and advocates classifying in three groups the stomach symptoms generally described under the name of nervous dyspepsia: 1, those of neurogenic origin, that is, disturbances occurring peripherally in the organ, from disease or trauma, irritation with centripetal conduction—this is the neurasthenic type; 2, the central or psychogenic type with centrifugal conduction of the irritation to the organ—the hysteric type; and 3, those of central, psychogenic origin but with no conduction of the irritation—the hypochrondriac type. These types are frequently combined and various observers interpret the symptoms in different fashion according to their pet theories. In a case described in detail the syndrome was accompanied by all the signs of Stiller's universal asthenia, also of what Cramer calls chronic atony of the intestines, while the patient could also be regarded as an example of Strümpell's axiom: "It is not the stomach trouble that makes a man a hypochondriac; it is the hypochondria that entails the stomach trouble." The patient, a young bachelor, further presented attacks of sudden dyspnea, with a chill, pain in the heart region, irregular pulse, etc., the attacks lasting perhaps half an hour—a typical example of what M. Herz has described as the sexual psychogenic cardiac neurosis. Each one of these scientists might have ticketed and demonstrated the case exclusively as a typical example of his special assumption in regard to nervous dyspepsia.

Berliner klinische Wochenschrift

May 30, XLVII, No. 22, pp. 1001-1044

72 *Determination of Minute Proportions of Blood in Clinical and Forensic Medicine. (Nachweis kleinster Blutmengen.) H. Citron.
73 Absorption of Radium Emanations Through the Skin. (Aufnahme von Radiumemanation durch die Haut.) W. Engelmann.
74 Certain Changes in the Respiration Rhythm. (Klinische Studien über einige Veränderungen des Atmungsrhythmus.) C. Frugoni.
75 *The Pneumatic Cabinet in Treatment of Chronic Bronchitis, Especially that Consequent on Heart Disease. (Die pneumatische Therapie bei chronischer Bronchitis.) H. Samter.
76 *Treatment of Paralytic Conditions in the Arm. (Behandlung von Lähmungszuständen an der oberen Extremität.) C. Helbing.
77 Jaundice with Appendicitis. (Icterus bei Perityphlitis.) E. Holländer.
78 Two Cases of Tubal Chorioepithelioma. (Die bösartigen Chorioepithelioma des Eileiters.) G. Davidsohn.
79 Röntgenology in the Service of the General Practitioner. G. Loose.

72. **Determination of Invisible Blood.**—Citron examines the fluid in question by mixing with alcohol, then rinsing with ether and dissolving the residue in pyridin. The latter dissolves the blood pigments and they are readily detected with the spectroscope if the specimen is inspected through its longest diameter. He uses a square shallow chamber to hold the specimen and examines it lengthwise.

75. **The Pneumatic Cabinet in Treatment of Chronic Bronchitis.**—Samter refers in particular to bronchitis associated with cardiac insufficiency and tabulates the effect on the blood pressure of the therapeutic application of the pneumatic cabinet. The influence of the compressed air is felt in the promotion of the respiration; the diaphragm descends deeper, the lungs expand, the walls of the bronchi spread apart and the mucus clinging to them is carried out by the more vigorous respiration. The best results were obtained with chronic bronchial catarrh without much fluid secretion. His experience has shown that even with a weak heart musculature the blood pressure does not drop in the cabinet, confirming the harmlessness of the method in uncomplicated cases of cardial bronchitis.

76. **Treatment of Paralysis of the Arm.**—Helbing discusses the orthopedic management of spastic cerebral hemiplegia and birth paralysis, emphasizing the importance of over-stretching of the muscle as the cause of the trouble. When the ends of the muscle are brought closer together, correcting the overstretching, the apparently paralyzed muscle will often regain its function as he shows by some typical examples.

Correspondenz-Blatt für Schweizer Aerzte, Basel

June 1, XL, No. 16, pp. 497-536

80 *Artificial Feeding of New-born Infants. (Zur Kenntnis der künstlichen Ernährung Neugeborener.) E. Döbeli.

80. **Infant Feeding.**—Döbeli gives artificial food to a newborn infant only in amounts sufficient to keep the child at the same weight after the first physiologic decline. He is convinced that the child brings with it into the world enough reserves to supply the needed calories for a time with little assistance. It has been his experience that children with the "exudative diathesis" were rather above the normal weight at birth, and he has never witnessed any harm result from keeping the food down to 300 gm. for the first two days and 500 or 600 gm. for the two or three weeks following. He prefers a 25 per cent. dilution of milk, generally skimmed. The children thrive better when kept on this small amount for the first few weeks. Plump children especially are well supplied with a reserve of calories and do not need to have fat supplied in the food at first.

Deutsche medizinische Wochenschrift, Berlin

June 2, XXXVI, No. 22, pp. 1017-1064

81 Thermopenetration. (Ueber Transthermie und die Therapie mit Aetherwellen.) C. Funck.
82 *Course of Laryngeal Tuberculosis with Artificially Induced Pneumothorax. (Verlauf der Kehlkopftuberkulose bei der mit künstlichem Pneumothorax behandelten Lungenschwindsucht.) A. Da Gradi.
83 Inoculation of Guinea-pigs with the *Spirochæta pallida*. (Erfolgreiche Uebertragung von Syphilisspirochäten auf Meerschweinchen.) H. F. Hoffmann and E. Tomasczewski.
84 Modification of Agglutinating Power of Paratyphoid Bacilli. (Umwandlung agglutininbindender Eigenschaften des Paratyphus B-Bacillus.) R. J. Boddaert.
85 *Importance of Mineral Salts in Pathogenesis and Treatment of Edema. E. Schloss.
86 *Significance of the Maximal Blood Pressure. (Die wahre Bedeutung des sogenannten maximalen Blutdruckes.) J. v. Benczur.
87 *Schlesinger's "Leg Sign" in Tetany. (Das "Beinphänomen" bei Tetanie.) W. Alexander.
88 Experimental Bases for the Electrocardiogram. E. Rehfisch. Commenced in No. 21.
89 Radioscopic Localization of Foreign Bodies. (Nadeln im Kniegelenk. Gebisse im Oesophagus.) M. Cohn.
90 *Robert Koch's Last Illness. L. Brieger and F. Kraus.

82. **Course of Laryngeal Tuberculosis with Artificially Induced Pneumothorax.**—Da Gradi reports from Forlanini's clinic at Pavia three cases of pulmonary tuberculosis in which pneumothorax treatment was applied, and the associated laryngeal lesions healed completely under its influence. He emphasizes that laryngeal tuberculosis should not be regarded as a local process, because it is maintained constantly by the passage of sputum from lesions lower down. If the latter are cured, the laryngeal lesions are liable to subside of themselves. In the cases reported this occurred under the simplest local measures or without them in one case as the infectious focus below practically healed.

85. **Importance of the Mineral Salts in the Pathogenesis and Treatment of Edema.**—Schloss confirms Levy's statement in regard to the extremely sensitive reactions on the part of infants to the intake of salt, thus permitting instructive research on the metabolism of mineral salts. After theorizing to explain the phenomena observed, he relates clinical findings which demonstrate the correctness of the deductions. It seems that the healthy infant behaves in respect to sodium chlorid like an adult with severe insufficiency on the part of the kidneys. The salt is retained for a longer or shorter time, and the proportion to be retained is determined by the relative salt poverty of the tissues; this is dependent on the food and is thus most pronounced in breast-fed infants. When more mineral salt is ingested the organism defends its cells against osmotic injury, first by a diluting reaction and then an elimination reaction. Which of these two reactions predominates depends on the greater or less harmfulness of the substances in question for the organism, especially for the kidneys. The predominance of the one or the other reaction entails edema or increased diuresis. With edema from congestion, effusions, etc., if a concentrated solution of salt is given, there will be increased elimination of water in consequence, draining away the edema. The salt does not exert any direct diuretic power and consequently salt is contraindicated in nephritis on account of the danger of retention and resulting injury. But a broad field of usefulness seems to be opening in the line of treatment of passive accumulations of fluid. He relates a striking example of this in an infant with idiopathic dropsy developing during feeding with buttermilk. By continuous administration of small doses of a mineral salt, this edema disappeared entirely in two days. He gave calcium phosphate in this case, having found that the calcium salts are more effectual than the sodium salts. His theory to explain why urea does not cause osmotic disturbances is that the latter result only with substances which are unable to permeate the cells; urea is evenly diffused in the cells and the fluids bathing them, consequently it does not entail osmotic disturbances—whatever other evils may be laid to its charge.

86. **The Significance of the Maximal Blood Pressure.**—Benczur advises the simultaneous use of the Recklinghausen apparatus or its equivalent and the Gärtner tonometer. The pressure in the tonometer shows only a trifling reduction when the apparatus above registers the "maximal" pressure. The suppression of the pulse wave merely transforms the waves of the blood stream into a continuous current; the lumen of the artery is not made smaller. The difference between the maximal blood pressure and the pressure in the cuff which suppresses the Gärtner pulse differs within a wide range. It is very small in heart disease with failing compensation.

87. **Leg Phenomenon in Tetany.**—Alexander has confirmed Schlesinger's findings in regard to the leg sign in tetany, mentioned in THE JOURNAL, April 9, 1910, p. 1244. He states that it was absent in two infants with other unmistakable signs of tetany, but it was constant in the few adults examined.

90. Summarized in Berlin Letter, June 25, 1910, page 2132.

Deutsche Zeitschrift für Chirurgie, Leipsic

May, CV, Nos. 1-2, pp. 1-260

91 *Experiences with 38 Cases of Ileus. (Zur Pathologie und Klinik der Darmokklusion.) S. Medowoy.
92 Radiologic Examination of Stenosis of the Duodenum. (Die Duodenalstenose durch Füllung und Peristaltik radiologisch erkennbar.) G. Holzknecht.
93 *Treatment of Spontaneous Dislocation of the Hip Joint in Consequence of Acute Disease. (Zur Therapie spontaner Hüftgelenksluxationen im Gefolge akuter Erkrankungen.) M. Brandes.
94 *Enterotribe Clamp for Gastroenterostomy, etc. (Ein neues Verfahren zur Ausführung der Gastroenterostomie und Enteroanastomose ohne Oeffnung des Darmlumens während der Operation.) E. Martini.
95 Roentgen-Ray Research on Hypertrophy of the Prostate. (Darstellung der Prostatahypertrophie im Röntgenbilde.) L. Burkhardt and H. Floercken.
96 Combination General Anesthesia. (Zur Frage über kombinierte Narkosen.) E. v. Karlowicz.
97 *Importance of the Thymus for Surgery. D. G. Zesas.
98 *Enterotribe Button for Gastroenterostomy, etc. (Wie kann man den vorläufigen Anus praeternaturalis und die Enteroanastomose, unter Verwertung der Vorteile und Ausschaltung der Gefahren der beiden Operationen, miteinander vereinigen?) A. Marro.
99 *Experimental Research on the Action of Measures for Resuscitation after Temporary Occlusion of the Aorta and Pulmonary Artery. (Experimentelle Untersuchungen über die Wirkung von künstlicher Atmung, Herzmassage, Strophantin und Adrenalin auf den Herzstillstand nach temporärem Verschluss der Aorta und Arteria pulmonalis, unter Bezugnahme auf die Lungenembolieoperation nach Trendelenburg.) A. Läwen and R. Sievers.
100 Deformity of Child's Thorax Resulting from Influence of Artificial Anus. (Ueber eine Thoraxdeformität bei lange bestehendem Anus praeternaturalis im Kindesalter.) A. Läwen.

91. **Ileus.**—Medowoy reviews the experiences with 38 cases of ileus at the university clinic at Basel in charge of Wilms.

93. **Treatment of Spontaneous Dislocation of the Hip Joint in Consequence of Acute Disease.**—Brandes emphasizes the importance of prevention of dislocation when a secondary process develops in a joint. Mere mechanical supports are not enough; the dislocation is generally the result of distention from an effusion in the joint, stretching and loosening the ligaments and favoring the escape of the head from its socket at the slightest accident or effort. Puncture to release the effusion, repeated as needed, is thus the best prophylaxis. It also aids in the healing of the inflammation. The majority of these secondary spontaneous dislocations occur in the course of typhoid fever, and consequently double vigilance is required in this disease. If the luxation has occurred, puncture, reduction and other measures as for congenital dislocation give the best results. In the personal case described, the luxation occurred in consequence of an osteomyelitic process in the neck of the femur in a little girl. The literature on the subject is reviewed, including Kummer's compilation of 51 cases of spontaneous luxation (exclusive of tuberculosis and osteomyelitis) and Degrez' 81 cases. The outcome is growing constantly better as the affection is being managed more and more like a congenital luxation.

94. **Enterotribe Clamp for Gastroenterostomy, etc.**—Martini reports good results from the use of a little shell which he has devised to facilitate the union of stomach and intestine. It consists of two concave parts hinged together at one end, the edges of both parts cut into sharp teeth, the whole when closed resembling somewhat a pea-pod, 4 or 6 cm. long by 8 or 10 mm. wide. The bowel is sutured to the stomach, then a buttonhole is made at one end of the suture and one arm of the enterotribe is introduced below the suture, the other arm clamping down on it from above. The suture is thus completely enclosed above and below inside the little shell. The teeth do not quite touch each other, so no opening

is made that might allow escape of the content of the gut. The parts are drawn together above the shell for a second suture, burying the shell beneath. The tissues slough away by the second or third day from the irritation of the teeth on the shell and the anastomosis is complete. The technic gave exceptionally good results in experiments on 12 large dogs, both for gastroenterostomy and enteroanastomosis.

97. **The Thymus from the Surgical Standpoint.**—Zesas reviews 21 operations on the thymus on record and mentions that Friedländer and Myers induced retrogression of an abnormally large thymus by Roentgen exposures, the former in a two months' old male infant, with 8 exposures in one month, the latter with 47 exposures in three months. In the 21 operative cases, 16 of the patients were cured, 2 improved and 3 died. No untoward by-effects were observed in any case. Hypertrophy of the thymus was discovered in 40 cases of death during anesthesia, 29 of the patients being less than 20 years old. In 22 cases of a fatality during an operation for exophthalmic goiter, the thymus was found enlarged; all but one of the patients succumbed to heart failure. This suggests, Zesas thinks, the possibility that the enlarged thymus should be the gland to be removed rather than the thyroid, or at least thymectomy should precede the strumectomy. The operation should not be deferred, however, until the heart has been injured beyond repair by the hyperthymization.

98. **Mechanical Device to Secure the Advantages of Both a Preliminary Artificial Anus and Enteroanastomosis Without their Dangers.**—Marro gives an illustrated description of a device invented for a special case, a patient with advanced tuberculosis with a femoral hernia incarcerated for five days. He has applied this "button enterotribe" in 2 cases to date with excellent results.

99. **Experimental Research on Measures for Resuscitation after Temporary Occlusion of the Aorta and Pulmonary Artery.**—Läwen and Sievers have been conducting extensive research to supply a physiologic basis for Trendelenburg's operative treatment of pulmonary embolism, studying the effect of clamping the aorta and pulmonary artery with and without artificial respiration and other measures for stimulation and resuscitation. The most effectual of all was artificial respiration with oxygen, possibly supplemented by an injection of epinephrin directly into the left ventricle. Massage of the heart may prove useful in addition, but this cannot be relied on alone. This combination revived the animals after 6 or 8 minutes—which is ample time for the Trendelenburg operation. There is no need for differential pressure during the operation as the respiration stops completely.

Medizinische Klinik, Berlin

May 29, VI, No. 22, pp. 849-888 and Supplement

101 *Treatment of Contracted Pelvis. (Behandlung des engen Beckens in Praxis und Klinik.) P. J. Jung.
102 Comparison of Clinical and Radiologic Findings in Stomach Diseases. (Die radiologische Feststellung gewisser Krankheitsbilder des Magens.) S. Jonas.
103 Treatment of Appendicitis. (Welchen Fortschritt sollen wir in der Behandlung der Blinddarmentzündung machen?) E. Siegel.
104 Climatic Treatment of Pulmonary Tuberculosis. (Klimatische Behandlung Lungenkranker.) A. Moeller.
105 Radiologic and Autopsy Lung Findings Compared. O. v. Dehn.
106 Operation for Presternal Dislocation of the Clavicle. Grunert.
107 *Alcohol and Other Stimulants as Medicines in Heart Disease. (Genussmittel bei Herzkranken.) M. Herz.
108 Advance Phase of the Diazo Reaction in Tuberculous Urine. (Ueber eine Vorstufe der Ehrlichschen Diazoreaktion im Harne von Tuberkulösen.) M. Weisz.
109 Improved Technic for Staining Tubercle Bacilli. (Tuberkelbazillenfärbung nach Gram und deren Bedeutung für die Sputumuntersuchung.) W. Beyer.
110 General Principles for Treatment of Leg Ulcer. (Behandlung des Unterschenkelgeschwürs.) J. Schäffer.

101. **Treatment of Contracted Pelvis.**—Jung remarks in the course of this postgraduate lecture that few practitioners realize the importance of taking the temperature as a routine measure in every obstetric case on first arriving. He denounces prophylactic version and high forceps unless the latter is the last resort just before perforation. In general practice, perforation is necessary with a much contracted kidney when the child is dead or there are signs of infection. He says in regard to artificial premature delivery that it should be recommended only when the mother and child afterwards can count upon careful attendance for a suitable length of time. In these conditions it is to be warmly commended. The moment for intervention he determines by examining the woman about once a week, striving to push the head into the pelvis. As long as it can be done with ease, the delivery can be deferred, but when this becomes difficult he interferes. The best time is the thirty-sixth week, but two or even four weeks earlier are suitable. A child weighing from 2,000 to 2,500 gm., or nearly 6 pounds, with good care generally develops well, without harm from the premature delivery. With primiparæ, however, he advises against premature delivery as it is impossible to foresee the outcome. The written consent of wife and husband he regards as indispensable before undertaking tubal sterilization in an operative case of much contracted pelvis, as also when abortion is induced. In the latter case he advises consultation with another physician, preferably the district physician.

107. **Stimulants, Etc., in Heart Disease.**—Herz believes that the moderate use of alcohol, coffee, tea, or tobacco may be advantageous in certain cases, especially when patients are depressed from the restrictions imposed by their disease. Denicotinized tobacco is especially useful for patients with heart disease. Alcohol and coffee may even have a direct remedial effect; a little brandy or wine may restore appetite and beer or rum dispel insomnia. Coffee may prove useful as a direct analeptic but it is contraindicated in cardiac neuroses as it is liable to increase the pulse. It also has a tendency to cause extrasystoles and thus should be avoided with signs of coronary sclerosis.

Münchener medizinische Wochenschrift

May 31, LVII, No. 22, pp. 1161-1208

111 *Constant Bacteriologic Findings in Lupus. (Zur Aetiologie des Lupus vulgaris.) M. Krüger.
112 Biologic Research on Tumor Cells. (Zur biologischen Untersuchung von Tumorzellen.) T. v. Wasielewski and L. Hirschfeld.
113 Serodiagnosis of Malignant Tumors by Means of the Meiostagmin Reaction. (Die Serodiagnose bösartiger Geschwülste mittels der Meiostagminreaktion.) M. Ascoli and G. Izar.
114 Salt as Antidote in Bromid Intoxication. (Weitere Mitteilungen über die praktische Verwendung des Kochsalzes in der Behandlung der Epilepsie.) A. Ulrich.
115 Acid-Fast Bacilli in Wind Instruments and their Importance in Diagnosis. (Säurefeste Bazillen in Blasinstrumenten.) E. Jacobitz and H. Kayser.
116 Theoretical Objections to Intravenous Ether Anesthesia. A. Brüning.
117 Advantages of Constriction Hyperemia after Removal of Tuberculous Glands in the Neck. (Stauungshyperämie zur Nachbehandlung nach Exstirpation tuberkulöser Halsdrüsen.) H. Mohr.
118 *A Duodenal Tube. (Eine Duodenalröhre.) M. Gross (New York).
119 *Symptomatology of Hysteria. H. Goldbladt.
120 *Intermittent Limp. (Klinische Beiträge zur Pathologie des "intermittierenden Hinkens"—der "Dysbasia angiosclerotica.") W. Erb. Commenced in No. 21.

June 7, No. 23, pp. 1209-1264

121 *Malignant Degeneration of Chronic Gastric Ulcer. (Zur Frage von der krebsigen Entartung des chronischen Magengeschwüres.) G. Hauser.
122 *Importance of Ambulant Typhoid in Children in Further Spread of Typhoid. (Bedeutung der ambulanten Typhusfälle im Kindesalter bei der Weiterverbreitung des Abdominaltyphus.) G. Brückner.
123 Paradoxical Movements of the Diaphragm. (Die paradoxe Zwerchfellbewegung.) A. Bittorf.
124 Pathology and Treatment of Coxa Vara. G. Hohmann.
125 *Causal Treatment of Glycosuria and Diabetes. C. Funck.
126 Meat Poisoning. (Zur Fleischvergiftung, bedingt durch den Bacillus enteritidis Gärtner.) R. Brekle.
127 Tuberculous Lesion in Optic Nerve. (Zur Tuberkulose des Sehnerven.) E. Reye.
128 Nature, Early Diagnosis and Encouraging Serotherapy of Typhoid. (Abdominaltyphus.) H. Lüdke.
129 Organization of Medical Literature. I. Boas.

111. **Etiology of Lupus.**—Krüger was able to isolate tubercle bacilli in scraps of lupous tissue in all of his 13 cases, using the latest technic. The positive bacteriologic findings suggest that the focus must entail active production of antibodies and this may be the explanation of the comparative rarity of new tuberculous infection in lupus patients; tuberculous lesions in the internal organs, especially in the lungs, seem to be remarkably rare in lupus patients.

118. Published in THE JOURNAL, April 23, 1910, page 1365.

119. **Symptoms of Hysteria.**—Goldbladt calls attention to the constancy of a sensation of dryness in the mouth and

throat as the most frequent sign of hysteria. He does not venture to decide whether this is a sensory disturbance or a defective secretion of saliva. An objective symptom which he has frequently encountered is a puffiness and bluish tint in the cheeks. When pronounced it looks as if a layer of a bluish pinkish powder had been applied. If not very typical, by stroking or tapping the cheek the phenomenon becomes more apparent. It may be observed in the center of the brow or sometimes over the entire face; in a few cases only in one cheek. He never found this symptom in cases of simple neurasthenia and depression but encountered it a few times in climacteric neuroses, when there was nothing to suggest hysteria. He has records of this sign of hysteria in 200 cases.

120. **Intermittent Limp.**—Erb reports a new series of 39 cases from his private practice, all but 2 in men. In his former compilation of 120 cases from his own and others' experience, only 7 of the patients were women. In this new series abuse of tobacco was evident in 19, repeated exposure to cold in 14 and abuse of alcohol in 10 or 11. There was a history of syphilis in only 3 of the 36 men. He asserts that intermittent limping—which he insists is best described as angiosclerotic dysbasia—is frequently incorrectly diagnosed, mistaken for other troubles and treated in the wrong way. This is especially dangerous on account of the possible danger of gangrene. The trouble generally develops gradually, but he gives several examples of a sudden onset. The partial or complete lack of the pulse in the foot is the one striking symptom, as also the varying behavior of the pulse, its disappearance when the feet are cold and its return after a warm foot bath or under treatment. Signs of general arteriosclerosis were evident in over 85 per cent. of the cases. The vasomotor disturbances he regards as the consequence rather than the cause of the organic obliterating arteritis responsible for the trouble. An important sign of a tendency to intermittent limping is the way in which the leg blanches when it is lifted repeatedly as the patient lies recumbent, followed by redness and hyperemia when the leg is left horizontal. This change occurs much more rapidly and pronouncedly than in health and persists very much longer. Under rest, warmth to the feet, iodid and bromid and galvanic foot baths, great improvement may be realized, even although the pulse in the feet is still imperceptible, as collateral circulation may develop. He also advises the wearing of warm stockings at night, rubbing the legs with alcohol, and other symptomatic measures and strict avoidance of all injurious influences, especially getting the feet wet, cold floors, cold douches and sea bathing, sleigh-riding and traveling in winter. Too hot foot baths and indiscriminate application of superheated air should also be avoided, as also energetic massage and the wearing of tight elastic stockings. In the severer cases the patient should be kept in bed and only when benefit is apparent should very cautious exercises be commenced. His experience shows that this combined and cautious treatment may give very satisfactory results in favorable cases. In conclusion he describes what he thinks is a new form of acute arteritis entailing sclerosis and intermittent limping. The patients were two young men suddenly developing continuous pain in one foot and typical intermittent limping but no general symptoms, no local inflammation or fever. Everything pointed to a primary affection of the arteries of the foot; in one case it developed after lying on the ground in wet clothes for an hour while hunting on a bleak day. Intense pain and the other symptoms came on two hours later.

121. **Malignant Degeneration of Gastric Ulcer.**—Hauser reports a case of scirrhous cancer of the stomach in which gastric ulcers had developed secondarily in the total absence of gastric hydrochloric acid. The peptic ulcers must have been the work of the secretion of the cancer—Neubauer and Fischer have recently demonstrated the existence of a peptid-splitting ferment in the stomach content of persons with gastric cancer. He believes that symptomless gastric ulcer and cancer are more common than generally recognized; malignant degeneration is necessarily a slow process.

122. **Unrecognized Typhoid in Children as Source for Epidemics.**—Brückner calls attention to three recent epidemics of typhoid in different communities in western Germany in which the infection was traced to a child who had had a mild gastrointestinal disturbance, so slight that medical aid was not sought. Several children who played with this child developed likewise a mild, ambulant and unrecognized form of typhoid, but from these children numbers of other cases in adults and children developed. In all these epidemics children between the ages of 11 and 15 furnished by far the largest contingent of cases. This preponderance of cases in children may explain the regional immunity observed sometimes in adults. As typhoid in children generally runs such a mild and not clinically appreciable course, this source of contagion can be eradicated only by the strictest supervision by medical school inspectors and teachers of every case of simple dyspepsia, and when general practitioners learn to look more universally for typhoid in children. An adult bacillus carrier was probably responsible for the first case in one of the epidemics reported, and in the others, hibernation of the typhoid germs, possibly in the soil or privies. Each epidemic might easily have been prevented if the first child or children had been seen by a physician or if the disease had assumed a clinically recognizable form. His experience demonstrates that typhoid is liable to be lurking beneath the most apparently harmless indigestion. It is especially suggestive when several children seem to be affected at about the same time, particularly in spring and late summer. A circular has been sent to physicians in the typhoid campaign zone in western Germany asking them to redouble their vigilance in all suspicious cases when a case of typhoid is known within the reach of their practice. In Strasburg all the physicians are notified by the health authorities by mail, a postal being sent to each with the street and number of each house where an infectious disease has been notified, T, for typhoid; D, for diphtheria, etc. Every effort is being made to teach general practitioners to rely more on bacteriologic examination from the very start in every suspicious case of indisposition.

125. **Causal Treatment of Diabetes and Glycosuria.**—Funck reports six cases of diabetes or glycosuria in which the sugar disappeared from the urine when existing gastrointestinal disturbances had been corrected by dietetic and other measures. The large glands controlling the carbohydrate metabolism may be affected by any infection or other general process or by the action of toxins generated in the body, and glycosuria may thus result as a third link in the chain. Instead of directing all one's energies to treating the glycosuria—which is only a symptom—the aim should be, he urges, to unearth the primal cause and cure it, after which the glycosuria will subside of itself. Especially effectual is treatment along these lines when the primary trouble is a gastritis or enteritis; in many such unrecognized cases the dietetic restrictions enforced for the diabetes had a direct curative influence on the causal trouble; as this was cured the glycosuria disappeared with it. He insists on the necessity for detection of the prediabetic stage; this requires examination of the urine again and again, tests of pancreas and liver functioning, and early recognition of the prediabetic symptoms, pruritus, alveolar pyorrhea, neurasthenia, etc.

Virchows Archiv, Berlin

June, CC, No. 3, pp. 385-572

130 **The Eye Changes in Leukemia.** (Augenveränderungen bei der akuten und der chronischen Leukämie.) P. Verderame. Commenced in No. 2.
131 **Bone Growth in the Skin.** (Knochenbildung in der Haut.) E. Sehrt.
132 *Addison's Disease and its Connection with Hyperplasia of the Lymphatic Apparatus and the Thymus. Kahn.
133 **Multiple Osteomas in the Tracheal Mucosa.** (Tracheopathia osteoplastica.) E. Brückmann.
134 **Ciliated Epithelium Cyst in the Thyroid.** (Eine Flimmerepithelzyste in der Schilddrüse.) R. Isenschmid.
135 **Suppurative Myelitis.** (Zur Kenntnis der eitrigen Myelitis.) K. Kawashima.
136 **Duplication Anomalies in the Kidneys.** (Doppelbildungen an den Nieren und ein Versuch ihrer entwicklungsgeschichtlichen Deutung.) H. Wimmer.
137 **Anatomic and Microscopic Findings with Infarcts in the Intestines.** (Befunde bei Darminfarzierung.) G. Pommer.

132. **Addison's Disease.**—Kahn shows by a review of the history of Addison's disease that much light has been thrown on it by the advance of science but that the changes in the

lymphatic apparatus and especially in the thymus have not been much studied to date, and no causal connection between them has been definitely recognized. He then reports a case of chronic Addison's disease in a youth with the thymolymphatic temperament. The suprarenals had been totally destroyed by a primary tuberculous process, as also in a similar case in a man of 41 with the status lymphaticus. Analysis of these cases and of similar ones in the literature seems to demonstrate a mutual stimulating action between the thyroid and the suprarenals and between the thyroid and the thymus, while there is a mutual inhibiting action between the suprarenals and the thymus. This assumption clears up, he says, some of the obscure features in both Addison's disease and exophthalmic goiter.

Wiener klinische Wochenschrift, Vienna

May 26, XXIII, No. 21, pp. 763-796

138 *Clinical Importance of Differentiation of Effusions and Transudates by Response to Acetic Acid. (Klinische Bedeutung des Essigsäurekörper-Nachweises in serösen Flüssigkeiten.) H. Popper and E. Zak.
139 Comparative Chemical Researches on the Brain. (Vergleichend-chemische Gehirnuntersuchungen.) K. Linnert.
140 *Bradycardia, Hypotonicity and Hypotonic Bradycardia. M. Herz.
141 Treatment of Bronchiectasia by Artificially Induced Pneumothorax. (Ueber Pneumothoraxtherapie bei Bronchiektasien.) O. Frank and N. v. Jagic.
142 Ovarian Pregnancy. (Ueber Ovarialgravidität.) J. Bondi.
143 *Resection of Posterior Spinal Roots for Gastric Crises in Tabes. (Zur Foersterschen Operation bei gastrischen Krisen.) A. Götzl.

June 2, No. 22, pp. 797-838

144 Consciousness and Intoxication. (Bewusstsein und Intoxikation.) E. Raimann.
145 *Transparency of the Skull with Congenital Hydrocephalus. (Ueber die praktische Bedeutung der Strasburgerschen Transparenzuntersuchung bei Hydrocephalus congenitus.) J. v. Bokay.
146 *Pathology of the Suprarenals. (Zur Pathologie der Nebennieren.) M. Goldzieher.
147 Prolongation of First Phase of Ether Anesthesia. (Ueber protrahierten Aetherrausch.) V. Schiller and J. Micen.
148 Experimental Research on Epidemic Poliomyelitis. IV. C. Leiner and R. v. Wiesner.
149 Behavior of Spermatozoa in Female Genital Tract. (Ueber das Verhalten der Spermatozoen im weiblichen Genitaltrakt bei Effluvium seminis.) K. Natanson and H. Königstein.

138. **Acetic-Acid Precipitation in Effusions, Etc.**—Popper and Zak report experiences which confirm the diagnostic importance of the determination of the albuminoid in organic fluids precipitated by dilute acetic acid. The technic is similar to Rivalta's test, but Moritz merely adds the drops of the 5 per cent. acetic acid to the fluid being examined. The fluid becomes turbid in case it contains much of the albuminoid. Non-inflammatory edema fluid gives no reaction but an inflammatory irritation soon produces a large amount of the substance giving the acetic-acid reaction. A negative reaction in the cerebrospinal fluid apparently excludes inflammatory irritation of the meninges.

140. **Bradycardia with Low Blood Pressure.**—Herz has been examining the records of patients with bradycardia or low blood pressure or both out of 1,000 patients with heart or vascular troubles—a total of 157 cases. Analysis of this material shows that a low blood pressure with heart symptoms—if insufficiency of the myocardium can be excluded—speaks for the purely functional nature of the heart trouble. Extrasystoles are almost never encountered with low blood pressure except in cases of heart neuroses. The predominant symptoms with the nervous low blood pressure are painful sensations in the region of the heart; with nervous bradycardia, palpitations, and with bradycardia accompanied by low blood pressure, general weakness. With bradycardia accompanied by low blood pressure there may be an actual "nervous" heart weakness, with or without albuminuria and edema.

143. **Division of the Spinal Roots in Treatment of Gastric Crises.**—Götzl reports the third case on record of the cure of the gastric crises in tabes by dividing the posterior spinal roots, confirming the benefit from intradural resection of some of the spinal roots in relieving the intolerable visceral pains in tabes. The healing of the wound was disturbed by a serous discharge for a few weeks. He discusses the anatomic basis for the phenomena observed and adds that ataxia and joint disturbances should not deter from the operation if the gastric crises become intolerable, but the poor prospects for healing of the wound justify it only as a last resort when addiction to morphin is otherwise inevitable.

145. **Transparency of the Skull with Congenital Hydrocephalus.**—The experience of von Bokay has confirmed the peculiar transparency of the part of the head where there is much hydrocephalus. He gives colored plates of three cases and the autopsy in two confirmed the clinical findings in regard to the deposits of fluid. In a darkened room the bones of the skull are transparent for the electric light but the brain tissue is opaque and the skull is transparent only where the brain is very much thinner than usual. In the transparent regions, the wall of the hemisphere was in places only a few mm. thick. This transparency permits location of the hydrocephalus and proves a guide for operative measures.

146. **Pathology of the Suprarenals.**—Goldzieher reports research which shows that the normal average epinephrin content in the human suprarenals is about 4 mg., while with arteriosclerosis the average amount was 5.8 mg. and with chronic nephritis 5.79 mg. On the other hand, in septic disturbances with low blood pressure, the average was only 1.5 mg. This loss of epinephrin was manifest in pneumonia, puerperal fever, meningitis and other septic processes, showing that it is merely a general reaction of the suprarenals to infections. The changes in the suprarenals may be a swelling of the parenchyma, cystic degeneration or development of hemorrhagic infarcts—all the changes being serious and explaining the disturbance or total arrest of suprarenal functioning in infectious diseases. This leads to an abnormally small proportion of epinephrin in the blood and this is clinically manifested by a lessened blood pressure. The collapse in septic affections is probably due chiefly to the lessened blood pressure resulting from the acute suprarenal insufficiency.

Zentralblatt für Chirurgie, Leipsic

June 11, XXXVII, No. 24, pp. 817-848

150 *Exposure of Base of Skull by Temporary Resection of Soft Palate. (Die Freilegung der Schädelbasis durch temporäre Gaumenresektion.) C. Hofmann.
151 Utilization of Conjunctiva from the Eye in Plastic Restoration of the Nasal Passages. (Benutzung der Bindehaut des Auges beim plastischen Verschluss von Defekten der Nase.) O. Sprengel.
152 *Technic for Conservative Arthrotomy. (Kniegelenkseröffnung.) O. I. Lauper.

150. **Exposure of Base of Skull by Resection of Soft Palate.**—Hofmann found that he was unable to obtain access to a tumor at the base of the skull by a median incision in the soft palate, and consequently in a recent case he carried the incision across the front of the roof of the mouth and along just inside the teeth to the rear, thus permitting the turning back of almost the entire roof of the mouth in a single flap. The pedicle of the tumor was in the region of the sphenoidal sinus and when this was severed the tumor almost dropped out of itself. The left common carotid had been ligated beforehand but he thinks that this precautionary measure might be dispensed with. The replacing and suturing of the flap were much less difficult than suturing a median incision in the palate.

152. **Conservative Arthrotomy.**—Lauper refers in particular to the knee and commends his technic of internal oblique incision, for a distance of 12 cm., slanting from above outward, a finger's breadth from the patella, and opening the capsule over the condyle of the femur without disturbing the joint proper, merely separating the periosteum and the capsule from the femur forward until past the median line, but not back toward the rear. Then with a little force it is easy to dislocate the patella outward without twisting it, merely pushing it outward by pressure on the external condyle. The knee is then flexed which permits extensive oversight of all its parts, both condyles, the inner articulating surface of the tibia, both crucial ligaments, and the median meniscus. When the leg is stretched the patella slides back spontaneously into its place. In the case described a sequester was removed and a glass drain introduced into the bursa below the quadriceps. It was removed in two days. Healing was complete in two weeks without impairment of function.

Zentralblatt für Gynäkologie, Leipsic

June 11, XXXIV, No. 24, pp. 801-832

153 Operation for Large Rectovaginal Fistulas. H. Thomson.
154 *Advantages of Prophylactic Appendicectomy. (Appendicitis mit Abszess im Uteruskörper nach einer vorher ausgeführten Ovariotomie: Beitrag zur Frage der prophylaktischen Appendektomie.) A. Grasmück.
155 Technic for Capillary Drainage of the Abdominal Cavity. (Drainage der Bauchhöhle.) A. Sippel.
156 *Stretching the Pelvis During Childbirth. (Ueber Beckendehnung der Kreissenden.) K. W. Krug.

154. **Prophylactic Appendicectomy.**—Grasmück reports a typical case to emphasize the perils from not removing an exceptionally long appendix when the abdomen has been opened for any cause. In his case the appendix had become adherent to the body of the uterus and an abscess had developed at this point in the uterus. The appendix was fully 12 cm. long, and this unusual length should have compelled its removal, Grasmück declares, at an ovariotomy done three years before for cystic degeneration of the right ovary.

156. **To Enlarge the Pelvis during Delivery.**—Krug comments on the beneficent arrangement by which Nature seeks to facilitate childbirth by serous imbibition in the cartilages of the pelvis, loosening up the joints and ligaments and permitting them to stretch. In a recent case in which the labor contractions were vigorous but the smallness of the outlet prevented the expulsion of the fetus, he introduced the three middle fingers of the right hand into the vagina and placed one finger on each of the bone protuberances, and then introduced the left hand in the same way. Then as the labor contraction came on he pressed with might with the tips of the three fingers on each side against the bones, exerting the stretching force all in the direction of the transverse diameter of the pelvis, lifting the pelvis a little as he did so. Repeating this procedure for six labor pains, the child was speedily safely delivered. The patient said that it much reduced the pain of the contractions.

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June 11, XXXI, No. 24, pp. 601-624

157 Digestive Leucocytosis in Laboratory Animals. (Die Verdauungsleukocytose beim Laboratoriumstiere.) C. Klieneberger and W. Carl.

Gazzetta degli Ospedali e delle Cliniche, Milan

May 24, XXXI, No. 62, pp. 657-664

158 Premonitory Swelling of Glands with Acute Infections. (Segno clinico premonitorio di diagnosi di malattia infettiva acuta.) G. de G. Giunta.
159 *Increased Phagocytic Power of the Leucocytes from Syphilitics in Presence of Syphilitic Serum. (Nuovo mezzo di leucodiagnosi della sifilide.) G. Burzi.

May 31, No. 65, pp. 689-696

160 *Castration Reduces Sensibility of Rabbits to Strychnin and Tetanus Toxin. (Castrazione e veleni convulsivanti.) T. Silvestri.

June 2, No. 66, pp. 697-704

161 *Bullet Lodging Harmlessly in Heart. (Ferita dell'arteria polmonare.) C. Viscontini.

June 5, No. 67, pp. 705-720

162 *Method of Making an Artificial Sphincter. (Sopra la possibilita di creare a scope chirurgico uno sfintere artificiale.) G. Ferrarini.

June 7, No. 68, pp. 721-728

163 Catheterization of Ureter as Means of Dislodging Calculi. (Sul cateterismo cistoscopico come mezzo terapeutico dell'anuria calcolosa.) F. Cuturi.

June 9, No. 69, pp. 729-736

164 *Scopolamin as Aid in Spontaneous Reduction of Strangulated Hernia. (La riduzione incruenta dell'ernia strozzata favorita dal bromidrato di scopolamina.) A. Luxardo.

June 12, No. 70, pp. 737-752

165 Technic for Operative Treatment of Varicocele. G. Masera.

159. **Leucodiagnosis of Syphilis.**—Burzi found that the phagocytic activity of the leucocytes, tested with spores of the *Oidium albicans*, was materially enhanced by adding serum from a syphilitic to the test mixture. This stimulating action was never observed with normal serum.

160. **Influence of Castration on the Action of Poisons Causing Convulsions.**—Silvestri has long called attention to the importance of the calcium salts in the origin and treatment of a tendency to convulsions; his assertions in regard to the altered metabolism of calcium as the principal factor in epilepsy, eclampsia and tetany have been often cited in these columns. The influence of the thyroid, ovary and testicle on the lime metabolism seems to have been established by recent research, which he here reviews in detail, commenting especially on the fact that a lack of the proper proportion of lime may be the effect of the glands which promote this metabolism or of the defective functioning of those which check it. The influence of the ovaries on the lime metabolism has long been known, and he here reports experiments to determine the influence of the testicles in this line. Their removal seems to have as important an effect on the skeleton as removal of the ovaries. The clinic and the laboratory have shown the favorable action of lime salts on the tendency to convulsions and as neutralizing the action of strychnin and tetanus toxin, and recent research has shown retention of the phosphates and of lime in castrated animals; so he undertook research which has demonstrated that removal of the testicles or ovaries in rabbits rendered them very much less sensitive to injection of strychnin or tetanus toxin, injected a few days to two weeks later, in a dose rapidly fatal for the controls. He has a patient who developed epilepsy at puberty which became aggravated on marriage and pregnancy but ceased entirely after double ovariectomy four years ago. Another patient, an epileptic for years, has had no seizures since removal of the testicles on account of a tuberculous process. For these and other reasons enumerated, Silvestri suggests research on the course of epilepsy in eunuchs and others after castration, with a view to possible therapeutic castration in epilepsy, if wider experience confirms the results of his experiments on rabbits.

161. **Bullet Lodging Harmlessly in Heart.**—A young man was shot in the back, the bullet passing through the third dorsal vertebra, severing the spinal cord, grazing the esophagus and bringing up against the wall of the pulmonary artery into which it finally perforated and at last dropped into the right ventricle where it was found at autopsy six months after the accident, the patient succumbing to complications of the paralysis resulting from the injury to the spinal cord. There were no symptoms discoverable from the presence of the bullet in the artery and heart. The only similar case that Viscontini has been able to find on record is that of Tegeler in which a bullet entering the aorta had lodged in the aortic valve but caused no disturbances except an accentuated diastolic sound. These cases emphasize the remarkable tolerance of the heart for even comparatively large foreign bodies.

162. **Technic for Artificial Sphincter.**—Ferrarini has been applying on dogs the artificial sphincter suggested by Girard and Tusini some years ago. A bunch of fibers on each side of the incision is drawn over to the opposite side and sutured, the result being an oval opening between the crossed fibers, the crossing enhancing their contracting and constricting power. He found that this elastic artificial sphincter admirably ensured continence even notwithstanding the fact that the muscle tissue is soon substituted by scar tissue. The latter retains the properties of contractile tissue sufficiently to answer the purposes desired.

164. **Spontaneous Reduction of Incarcerated Hernia Under Influence of Scopolamin.**—Luxardo has found that a very small dose of scopolamin may act on the ganglia of the intestines sufficiently to permit the spontaneous reduction of an incarcerated hernia. He found 5 or 10 decimilligrams ample for the purpose in the four cases reported, the inguinal hernia in each case smoothly subsiding in from 30 minutes to two hours. This was aided materially by the displacement of the gases above under the influence of the drug.

Policlinico, Rome

June 12, XVII, No. 24, pp. 739-770

166 Bacteriologic Study of Fish Poisoning. (Contributo allo studio dell'ictiosismo.) M. Pergola and A. M. Collodi.
167 Hemoglobinometer. Belosersky.

Riforma Medica, Naples

May 23, XXVI, No. 21, pp. 561-588

168 Lactose in Saliva of Nurslings. (Ricerche sulla lattasi nella saliva del lattante.) G. B. Allaria.
169 Experimental Research on the Effects of Lesions of the Pancreas. (Contributo sperimentale allo studio degli effetti delle lesioni di continuo del pancreas.) L. Fioravanti.
170 *Senile Chlorosis. A. Conti.

170. **Senile Chlorosis.**—Conti had three patients between the age of 57 and 60 with general progressive weakness, lack of appetite, slight edema and pallor, for which no cause could be discovered until examination of the blood revealed typical chlorosis, with rapid recovery under iron. When one preparation of iron failed to benefit, another answered the desired purpose. He advises changing the preparation in three or four weeks or changing the method of administration, the physician having the choice between the gastric, hypodermic and intravenous routes; sometimes a rapid cure may follow a mere change from one to another ordinary preparation.

Hygiea, Stockholm

March, LXXII, No. 3, pp. 225-336

171 *Clinical Experiences with the Wassermann Reaction in 700 Cases. H. C. Jacobaeus. Commenced in No. 2.
172 The Maximal Doses in the Swedish Pharmacopeia for Potent Drugs. (Om maximaldoserna för en del af vora mera ofta använda herolca.) H. Enell.

April, No. 4, pp. 337-432

173 *Adenoid Vegetations and Tuberculosis. E. Wikner.
174 *Autopsy of a Typhoid Bacillus Carrier. (En tyfusepidemi genom en bacillbärare.) I. Jundell.
175 The Importance of Hypnotism in Treatment of Mental Disease Still an Open Question. (Kan hypnotismen få någon betydelse i sinnessjukdomarnas terapi?) E. af Geijerstam.

May, No. 5, pp. 433-592

176 *Local Treatment of Tuberculosis with Combined Action of Sodium Iodid and Ozone. (Ett fall af framskriden tuberkulos i svalget och struphufvudet, som gått till läkning genom användning af en ny behandlingsmetod. Demonstration af nya fall, behandlade med NaJ + O_3, jämte ytterligare några ord om denna behandlingsmetod.) S. A. Pfannenstill.
177 Pseudoleukemia and Tuberculosis. (Till kännedomen om Sternbergs "eigenartige Tuberkulose des lymphatischen Apparates.") A. Lichtenstein.

171. **Wassermann Findings in 700 Clinical Cases.**—In 13 cases of liver disease a dubious reaction was obtained in 2, but all the other patients reacted positively. A tumor was palpable in 4 cases and in 2 surgical treatment had been mistakenly applied. In 4 of these cases the spleen was considerably enlarged, but there was no jaundice in any case. Periodically recurring fever was observed in only one case but there was fever at times in several. In one case the liver had evidently been previously injured by abuse of alcohol as the liver disease developed in a serious form only 4 months after syphilitic infection, and 25.5 liters of ascitic fluid were withdrawn at the first tapping. The liver and peritoneum were probably affected in somewhat the same way as the skin; this view is sustained by the rapid improvement under specific treatment; the ascites disappeared more promptly than the liver symptoms. In one case of liver syphilis, the blood findings and other symptoms suggested Banti's disease and in two others this had been the diagnosis elsewhere. The positive Wassermann reaction in 3 out of 4 cases of supposed Banti's disease is suggestive, also the rapid recovery under antisyphilitic measures and the fact that no benefit was derived from them in the one case with a negative reaction. It seems evident that the Banti syndrome is in a certain proportion of cases a form of syphilis affecting the liver and spleen. In a number of the 13 cases of liver affections giving a positive reaction there were gastro-intestinal symptoms. A positive reaction was obtained also in 3 out of 5 cases of Mikulicz' disease. In 74 cases of syphilis of the nervous system a positive reaction was obtained only in about 50 per cent. of the cases in which treatment had been applied systematically, while it was positive in over 88 per cent. among the untreated patients. In 2 cases of typical tabes the reaction was negative and the patients also denied syphilitic infection and had never taken any specific treatment. A negative reaction in the absence of a history of syphilis and of specific treatment is decisive but not under other conditions. Jacobaeus' experience confirms the importance of continuing treatment as long as the reaction is positive, even after subsidence of all clinical manifestations. But a negative reaction does not have much significance and with it the clinical manifestations should govern treatment. The histories of the various cases are given in detail. The proportion of positive reactions in 100 cases of cardiovascular disease was surprisingly large; especially with aortic insufficiency.

173. **Adenoid Vegetations and Tuberculosis.**—Wikner found evidences of tuberculosis in the growths in only 1 of 27 cases of adenoid vegetation, and in this case it was manifestly secondary.

174. **Autopsy of Typhoid Bacillus Carrier.**—Jundell found the gall-bladder and small intestine crowded with typhoid bacilli in the case described. The gall-bladder was comparatively normal and yet the bacilli were found in incredible numbers and in pure culture. The blood and urine were sterile. The patient was a healthy woman of 83 who had beyond question been the source for a number of cases of typhoid in her environment in the course of the last twenty years.

176. **Two-Route Treatment of Localized Tuberculous Processes.**—Pfannenstill calls attention to the remarkable benefit derived in laryngeal and other accessible tuberculous processes from a method of treatment based on the principle of generation of a powerful antiseptic substance by the chemical union within the tissues of two substances introduced by different routes—one brought to the tissues by the blood, the other with inhaled air or otherwise. A chemical reaction results on and in the tissues. He has been experimenting in this line since 1890, and thinks that the combination of sodium or potassium iodid for the blood-brought element and ozone for the inhaled gaseous element answers the purpose admirably. The chemical union resulting liberates iodin in nascent form.

He describes a number of instructive cases demonstrating the remarkable curative efficacy of this method of treatment. The action is necessarily restricted to localized infectious processes, particularly in the upper air passages, of either tuberculous or syphilitic origin. The iodid is taken by the mouth, the ozone inhaled.

Books Received

All books received are acknowledged in this column and such acknowledgment must be regarded as a sufficient return for the courtesy of the sender. A selection will be made for review in the interests of our readers and as space permits.

THE DIAGNOSIS OF SMALLPOX. By T. F. Ricketts, M.D., Medical Superintendent of the Smallpox Hospitals and of the River Ambulance Service of the Metropolitan Asylums Board. Illustrated from Photographs by J. B. Byles, F.R.C.S., Senior Assistant Medical Officer at the Smallpox Hospitals of the Metropolitan Asylumns Board. Cloth. Price, $6 net. Pp. 154, with 136 illustrations. New York: Funk and Wagnalls Co., 1910.

AMERICAN PRACTICE OF SURGERY. A Complete System of the Science and Art of Surgery, by Representative Surgeons of the United States and Canada. Edited by Joseph D. Bryant, M.D., and Albert H. Buck, M.D. Complete in Eight Volumes. Volume VII. Cloth. Price, $7. Pp. 961, with 396 illustrations. New York: William Wood & Co., 1910.

RADIUMTHERAPY. By Dr. Louis Wickham, Physician in Saint-Lazare, and Dr. Degrais, Chief of the Laboratory in the Hôpital Saint-Louis. Translated by S. Ernest Dore, M.D., Cantab. With an Introduction by Sir Malcolm Morris, K.C.V.O. Cloth. Price, $5 net. Pp. 306, with 92 illustrations. New York: Funk and Wagnalls Co., 1910.

A MANUAL OF PERSONAL HYGIENE. Proper Living on a Physiologic Basis. By American Authors. Edited by Walter L. Pyle, M.D., Member of the American Ophthalmological Society. Fourth Edition. Cloth. Price, $1.50 net. Pp. 472, with 131 illustrations. Philadelphia: W. B. Saunders Co., 1910.

DAS KYSTOSKOP. Eine Studie seiner optischen und mechanischen Einrichtung und seiner Geschichte. Lehrbuch für Aerzte und Studierende. Von Dr. Otto Ringleb, Spezialarzt für Urologie in Berlin. Paper. Price, 7.50 marks. Pp. 194, with 98 illustrations. Leipsic: Dr. Werner Klinkhardt, 1910.

THE STRAW ITCH (DERMATITIS SCHAMBERGI). A Disease New to American Physicians. By Joseph Goldberger, Passed-Assistant Surgeon, United States Public Health and Marine-Hospital Service. Paper. Pp. 8, with illustrations. Washington: Government Printing Office, 1910.

NURSING IN DISEASES OF THE EYE, EAR, NOSE AND THROAT. By the Committee on Nurses of the Manhattan Eye, Ear and Throat Hospital, New York. Cloth. Price, $1.50 net. Pp. 281, with 81 illustrations. Philadelphia: W. B. Saunders Co., 1910.

POST-MORTEM MANUAL. A Handbook of Morbid Anatomy and Post-Mortem Technic. By Charles R. Box, M.D., Physician to Out-Patients, St. Thomas' Hospital. Cloth. Price, $2.40 net. Pp. 335. Philadelphia: P. Blakiston's Son & Co., 1910.

SYPHILIS. By Jonathan Hutchinson, F.R.C.S., Consulting Surgeon to the London Hospital and to the Royal London Ophthalmic Hospital. Cloth. Price, $3 net. Pp. 583, with 36 illustrations. New York: Funk and Wagnalls Co., 1910.

THE WORK OF NEW YORK'S TUBERCULOSIS CLINICS. A Critical Study of Its Own Work Made for the Association of Tuberculosis Clinics. By F. Elisabeth Crowell, Executive Secretary, May, 1910. Paper. Pp. 87, with illustrations.